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PROVINCE OF ONTARIO

MINISTRY OF THE ENVIRONMENT

SAMPLE INFORMATION SYSTEM

A storage and Retrieval System for
Sample Submission/Results Data

USER MANUAL

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Province of Ontario ministry of the environment sample information system : a storage and retrieval system for sample

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MEMORANDUM

TO: SIS System Users

FROM: N. R. Maddeaux 965-6952
Senior Systems Analyst/Specialist
Office of Systems Development

RE: SIS USER MANUAL - VERSION 4.2

Modifications to the SIS update and retrieval systems which have been implemented over the past year are highlighted in this memorandum. For actual details, Users should reference the appropriate sections in this manual. If you have any questions or problems please do not hesitate to call.

a. Station Description File Update Modifications

1) When adding a new record to the system, the Ministry REGION code field must contain a valid value.

2) UTM or Latitude-Longitude co-ordinates should be coded. If UTM co-ordinates are coded, the system will convert the value to a latitude longitude value. Likewise, if latitude longitude values are coded and no UTM values are present, the system will caculate the UTM value.

3) The User may now input SDF transactions at a 3270 type terminal instead of coding values on a SDF Update Form. Systems Operations will update the SDF file with the transactions created by the user.

b. Sample Results Master File Modifications

1) The User may now input SRM transactions at a 3270 type terminal instead of coding values on a SRM Update Form. Systems Operations will update the SRM master with the transactions created by the user.

2) To overcome several difficulties users were having with the LIS/ SIS update procedure, several modifications were carried out in late October to the system. These are summarized below.

    a) The initial LIS sample record passed to the SIS will create a new sample record where there is no record with the same sequence key.

b) Where a sample record exsists in the SIS because of either a previously LIS/SIS update or by the user adding the record thru the SIS SRM Update procedure or Bench Update procedure, the SRM fields will be modified as follows:

- LIS fields such as sampling agency, field page data (data not stored in SIS as tests), and descriptions will be replaced in each LIS/SIS update;

- the LIS sample record will update those "field data" fields which are located in the fixed portion of the SRM record only if the fields do not contain values - this will permit the user to modify the record without fear that the LIS will replace the changed values: examples of these fields are - project, sub-project, water depth, water layer, bearing from reference, sample type data;

- LIS entered field data which are stored in the SIS as tests will be replaced and/or added in each LIS/SIS update - these are not to be modified by the user until the record has a status of "final" (i.e. - field ph, water temperature, air temperature, field turbity etc.);

- LIS analytical tests will be replaced and/or added in each LIS/SIS update - these are not to be modified by the user until the record has a status of "final";

- user may submit SRM Update forms to add or change tests which are not passed to the SIS by LIS (i.e. - regional lab tests)

c) Users are not permitted to modify the sequence keys of the SRM record thru the Update procedure until the record has a status of "final". The SRM sequence key affected are:

- Station id
- Sample Date
- Sample Time
- Distance From Shore
- Sample Depth
- SIS Sample Type
- Sample Number

c. Retrieval System Modifications

1) The Station Detail Report format was modified to permit the printing of a three character remark code. Users should not request the test name SAMPLE in the retrieval (e.g. TEST=SAMPLE) as the field sample number will always be printed if the test is not requested.

2) The Option NOTOTAL was added to the OPTION Control card. This permits the user to produce the Station Detail Report without the statistics being printed.

3) The SIS TSO procedure was modified so that the user is not prompted for the program/study, master file to be used and JCL options. The system will scan the input control card file and create these parameters automatically.

PROVINCE OF ONTARIO

MINISTRY OF THE ENVIRONMENT

SAMPLE INFORMATION SYSTEM

(S. I. S.)

A Storage and Retrieval System For Sample Submission/Results Data

April 1985

Version 4.2

Prepared by
N. Maddeaux
Office Of Systems Development
Finance And Administration Division

SAMPLE INFORMATION SYSTEM

TABLE OF CONTENTS

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PREFACE

ABSTRACT

100 INTRODUCTION

200 SYSTEM DESCRIPTION

300 USER PROCEDURES

350 DATA RETRIEVAL

400 DATA CONTROL PROCEDURES

500 KEYPUNCH PROCEDURES

900 SYSTEM MESSAGES

APPENDICES

A FILE FORMATS

B REPORT EXAMPLES

C STATION ID FORMATS FOR PROGRAM/STUDIES

D SRM MASTER FILE RECORD TOTALS

E DATABASE CO-ORDINATOR NAME LISTING

PREFACE

In 1970-72 the Ontario Ministry of the Environment (then the Ontario Water Resources Commision) developed and Implemented the "Water Quality Information System" to store and retrieve data for the Great lakes program.

Since its implementation, the system has been substantially modified to expand the retrieval capabilities an to enable the storage of all sampling data analyzed at the Ministries laboratories. The system is now referred to as the Sample Information System (S.I.S.).

This manual is designed to help the user understand the SIS and assist him or her in obtaining the information required.

The manual described the files used to store the information; the updating procedures for each file; all the retrieval reports currently available; and the method of requesting each report.

ABSTRACT

This manual describes the development of the Sample Information System. It then explains in detail the structure of the four files making up the SIS system - the Code Description File, Station Description File, Station Supplementary File, and the Sample Results File. An outline is given of the steps involved in the sample collection process for the Ministry. The various types of retrievals available from the SIS are explained and examples are shown.

The manual can be divided into five main areas as follows:

1) General Description which includes Sections 100 and 200

2) User Procedures for the updating of the SIS master files

3) User Procedures for the Retrieval of Data which are found in Section 350

4) Data Control procedures for the Systems Operations Section which includes Sections 400 and 500

5) System Messages

INTRODUCTION

TABLE OF CONTENTS

OVERVIEW 100-10-1
  GENERAL 100-10-1
  SYSTEM OBJECTIVES 100-10-1
  INTERFACES TO OTHER MINISTRY SYSTEMS 100-10-2

INTRODUCTION

TABLE OF CONTENTS

GENERAL

The Sample Information System (SIS) is a generalized automated storage and retrieval system designed to edit, store and retrieve sample submission/results data processed in the laboratories of the Ontario Ministry of the Environment. It also provides the capability for including sample submission results data from other agencies upon reformatting to meet the systems requirements.

SYSTEM OBJECTIVES

The overall objectives of the Sample Information System are:

a. to provide a standard sample results master file format for storage of Ministry sample result data

b. to provide a standard input and master file format for sample point locations and descriptions

c. to provide a standard method of range editing for sample results data by geographical location

d. to provide a common data retrieval method to meet the requirements of the Ministry's branches

e. to be capable of future expansion or modification to include additional and future sampling programs

f. to provide an interface between the Laboratory Information information System (LIS) and the storage and retrieval needs of the Ministry's operating branches.

INTERFACES TO OTHER MINISTRY SYSTEMS

Laboratory Information System (LIS)

The automated LIS system is able to process sample submission data when sample submissions are received and entered into the laboratory for processing, and test results data acquired from both manual and automated analysis work stations when they become available throughout the laboratory. The system will also be capable of operating in an interactive mode with scientists, analysts, technicans and management in the laboratory and communicating with the client branch systems operating in the Downsview Computing Centre.

Sample processing begins with the log-in of samples at the various sample reception areas. the system will be capable of handling a variety of submissions forms and be able to easily adapt to new ones.

Once the submission data has been entered into the system, the system will be capable of keeping tract of the samples as they move through the various stages in the daily production process. stages include: waiting in instrument queues; being batched and placed in pre-test status; being analyzed and placed in in-process status: completed and waiting on the output of analytical result reports.

The selection of batches and the generation of bench sheets listing samples to be analyzed at work stations will be a scientist/analyst/ technican function. The system will select the samples to be batched according to priority and time of receipt.

Throughout the daily production process the scientists, analysts, technicans and management personnel will be able to interact with the system in order to query the status of various sample submissions and tests and when necessary be able to change the status and adjust priorities to reflect various operational considerations.

The acquisition of results begins with the capture of instruments responses at all works stations throughout the laboratory, either directly from on-line instruments such as auto-analysers, gas and liquid chromatographs, atomic absorption units, emission spectrography, or from off-line instruments via keying-in at terminals. The caculation and editing of final results will be performed by the system according to predefined procedures maintained in the system.

The evaluation and approval of results for release will be based on an interactive dialogue between the system and the senior scientist/ analyst/ technican responsible.

When all the tests requested in a sample submission have been completed, a final analytical result report will be printed for distribution to clients. In addition, production statistics used for management reporting purposes will be updated and the sample results data transmitted to the SIS system at the Downsview Computing Centre.

On a periodic basis (i.e. weekly, monthly and annually) the system will use the accumulated production statistics to produce operational and management information reports.

The system slso provides the basis for developing future modules to facilitate the overall management of Ministry sampling programs, laboratory operations and central stores.

Air Quality Information System (AQUIS)

The system is used primarily to process and analyze the concentration of various air contaminants measured at locations scattered throughout the Province of Ontario. A substantial portion of the air quality data and almost all the meteorological data is acquired through a telemetering system on a real time basis. Presently, the system processes information on approximately 140 different contaminants including the meteorological measurements which are identified by a set of common codes. The system reports on the ambient air quality levels in the Province and assists the management in determining the compliance of the ambient air quality levels with criteria levels for desirable air quality set under the Province's Environmental Protection Act, 1971.

The system also provides a Province-wide inventory of ambient air quality and meteorological measurements. This data is available to universities, public and private agencies and to the general public on request.

An interface exists between the SIS and AQUIS which allows for the extraction of sample result data from SIS and its subsequent storage in AQUIS.

Drinking Water Monitoring System (DWMS)

The system provides a co-ordinated set of information for drinking water quality from Ontario Potable Water Treatment Facilities.

It combines detailed laboratory analysis with concurrent field sampling data and plant operating data. Together, they provide a relevant base for monitoring trends, flagging potential trouble areas, and responding selectively to information requests.

An interface exists between the SIS and DWMS which allows for the extraction of sample result data from SIS and its subsequent storage in DWMS.

SYSTEM DESCRIPTION

TABLE OF CONTENTS

INTRODUCTION 200-10-1
  GENERAL 200-10-1

MINISTRY DATA COLLECTION AND STORAGE PROCESS 200-20-1
  GENERAL 200-20-1

SIS SYSTEM DATA FILES 200-30-1
  GENERAL 200-30-1
  CODE DESCRIPTION FILE (CDF) 200-30-1
  STATION DESCRIPTION FILE (SDF) 200-30-5
  STATION SUPPLEMENTARY FILE (SSF) 200-30-5
  SAMPLE RESULTS MASTER FILE (SRM) 200-30-6

RETRIEVAL OF DATA FROM S.I.S. 200-40-1
  GENERAL 200-40-1
  RETRIEVAL REPORTS 200-40-3
  SPECIAL REPORTS 200-40-5
  OUTPUT FILES 200-40-6

SYSTEM DESCRIPTION

TABLE OF CONTENTS

GENERAL

An effective data processing effort involves five phases:

1) Data generation

2) Data recording

3) Data validation

4) Data storage and retrieval

5) Data analysis and interpretation

These phases of data processing as they apply to air and water quality surveillance, are discussed in the paragraphs that follow.

Data Generation

Generating raw data (i.e. unprocessed and unvalidated observations representating levels of pollutants or related information) is the first step of acquiring air and water quality data. In the past control agencies have given this phase the major share of attention. Such considerations as sampling method, averaging time, instrument type, and site location have been extensively reviewed. Identification and characterization of the sampling site, however, have sometimes been neglected. Yet data cannot be properly interpreted unless the conditions under which they were gathered are known. All to frequently, detailed information on sampling sites, instruments, and methods are unavailable. These omissions seriously reduce the usefulness of the data. Agencies should take get care to provide a complete and extensive description of the sites (and their surroundings) at which data are gathered, and to provide complete and accurate location data along with descriptions of the sampling methods and analytical procedures. This information about the sampling sites will help assure that all data gathered at those sites are not misinterpreted or misunderstood.

Data Recording

With certain instrumentation, data representing pollutant concentrations, time of occurance, and other related information are recorded at the sampling location. These data may be in machine readable or non-machine readable form or both (i.e. pollutant observations on punched paper tape with the information describing instrument maintenance hand recorded). With other devices such as manual samples (machine or man) the only data recorded at the site are identification, field observations and if required, maintenance information. The collected samples are chemically analyzed and observations recorded at a central location.

Regardless of how the data arrives for processing, at this point the question of format arises. Choice of a format need not present difficulties, however, if one realizes that it simply involves selecting a systematic way of recording data for processing. Selection of a format need not constrain an agency in any way, particulary if data are recorded in machine readable form, for then the data can be reproduced with very little difficultly into a variety of forms and formats. For example, an agency could easily use one format for certain internal records and another format for interchange of data with other agencies.

The availability of data in a clearly defined and well documented format is the very basis of an effective data processing system. All too often, data are recorded in a format that is complicated, confused, incomplete, and insufficiently documented. When such data leave the immediate care of the person responsible for recording them, their utility is effectively lost. The SIS format provides a complete, systematic method for recording data for storage or reporting purposes. Because a complete description of this format is available to all users, data recorded in this format are immediately accessible and exchange of data among agencies is facilitated. Thus, the SIS system format is used to record all sample submission data submitted to the Ministries laboratories.

Data Validation

An agency's routine use of an effective data evaluation process determines the validity and usefulness of the numbers recorded. The first major step of data validation is applying corrections for known instances of instrument malfunction.

The second major step in data validation is investigation of other possibly incorrect data. The data under scrutiny should be carefully compared with a previously established table of limits for:

1) High values

2) Low values

3) Extreme changes in values for consecutive observations.

Limits for high values could be based on air or water quality standards or on past history of the sampling site. Limits for low values could represent the minimum dectable capability of the instruments and methods of anaylsis. A low value check could also be made for consecutive readings below a designated value. Where past data from the site are available, the current values can also be compared with earlier trends as a validation check.

Data Storage And Retrieval

Systematic data storage provides a means of protecting records against physical deterioration and also insures that past data can be quickly and easily retrieved. Effective security measures must be determined to guard against premature release of data before they have been throughly validated. Data retrieval involves procedures whereby past data can be readily located, retrieved, and used. Careful and complete documentation of the location and content of stored records will insure that establisted procedures are followed and records used properly.

Data Analysis And Interpretion

Data analysis usually includes calculating arithmetic and geometric means and their respective standard deviations. The means provide a useful measure of central tendency or the "average" value of a pollutant concentration, while the standard deviations and maximum pollutant concentration are useful for characterizing the spread of the data values about the mean value. Many agencies also calculate frequency distributions, which give the percentage of sampling intervals during which any given pollutant concentration is exceeded. Agencies also may perform more elaborate analysis for research studies or other special uses. Upon completion of data analysis, an effort should be made to interpret the results in terms of meteorological conditions, characteristics of emission sources, and topographic conditions. Data interpretation requires complete and detailed knowledge of the sampling site and surrounding area, as well as the instruments and sampling methods. Here again is reflected the importance of site identification data, which can pinpoint the location of unusal occurances that may call for even more detailed information about the area. In this way agency personnel can develop an understanding of the characteristics of air and water quality within their jurisdiction. This understanding is then applied in working with local industries and citizens towards effective prevention, control, and abatement of air and water pollution.

GENERAL

This section briefly describes the process of data collection for routine monitoring programs within the Ontario Ministry of the Environment. The block diagram on the next page illustrates the steps involved.

The location of a sampling point is decided, based on criteria such as

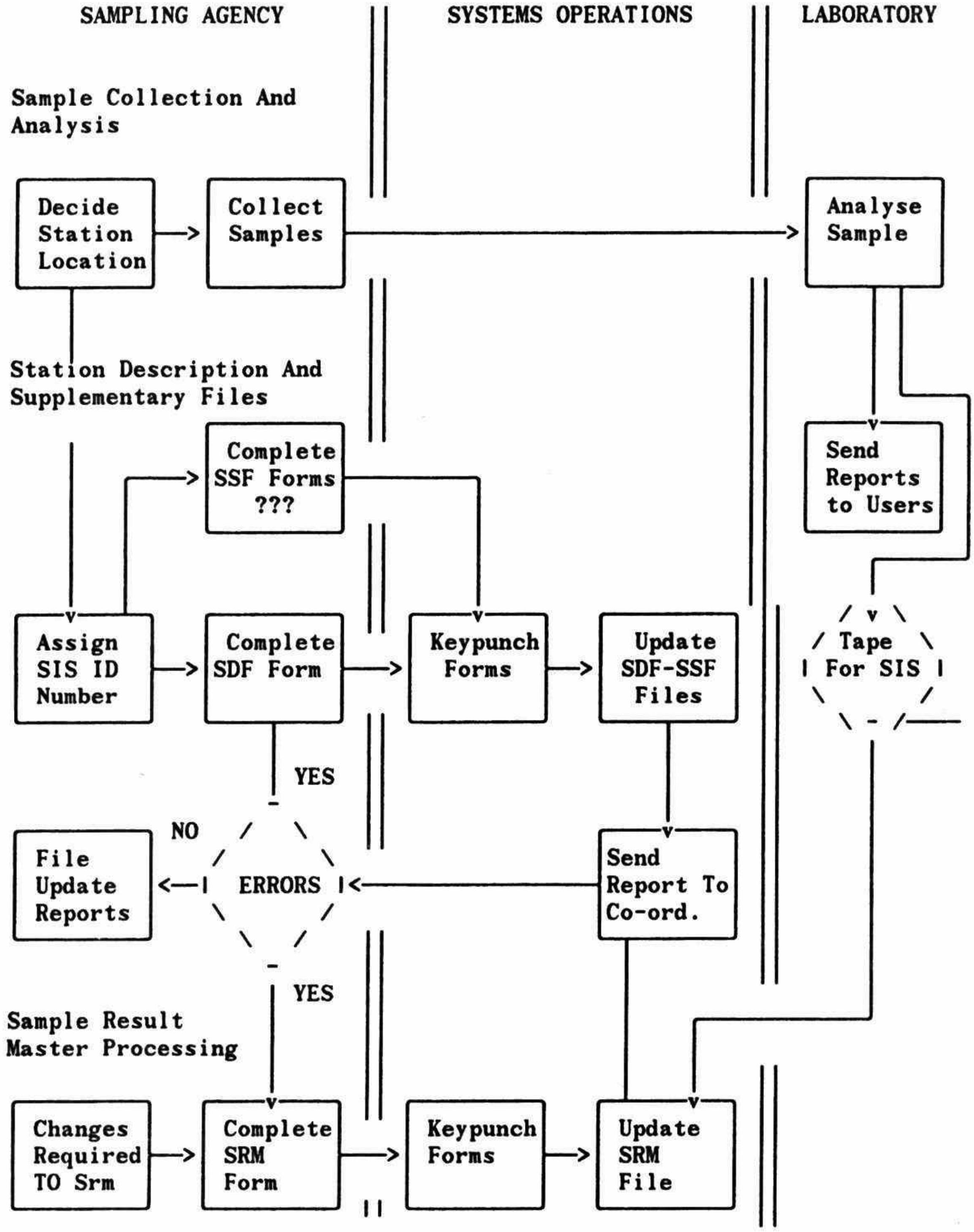
1) type of program
2) topography of the region
3) use of water (water quality programs)
4) discharge (into air-water)
5) planned or potential industrial, municipal or agricultural development.

Once the station is chosen, a station number (maximum of 20 characters - see Station Description File procedures) is assigned and the information on the SDF update form filled in. If required, limits for the tests to be analyzed at a location are coded on the SSF form. The forms are then sent to the Systems Operations and Support section for keypunching and subsequent storage on the appropriate data file. The information about the sampling point needs to be filled out, keypunched and stored only once per sampling point, prior to storing actual analytical results. If at a later date it is found that some of the fields for a particular station number need modification, the system allows such transactions.

The sample is collected and certain field measurements are done, depending on the specific program for which the sample is taken. The field information, such as date, time depth of sampling, field sample number, and field results are recorded directly onto the Laboratory Request For Analysis Sheet. An example of this sheet is found in the appendices.

The sample, in the proper container (in required) with the proper information, is sent or taken to one of the regional laboratories or to the main laboratory in Toronto for analysis.

STATION AND ANALYTICAL DATA COLLECTION AND STORAGE
ROUTINE MONITORING



When the sample has been analyzed, the laboratory sends an analysis report to the appropriate person(s). Usually weekly, a computer tape is produced at the main laboratory with all the field data and analyses at this point. This tape is then used to update the SIS sample results master file. There are two types of records on this file:

1) Interim, and

2) Final.

An interim record has the same format as a final record execpt that all the analyses for a sample have not been completed at the time of data transfer to the SIS. The following week this same interim record could be transfered as a final record if all the analyses are then completed.

Once the data tape is received at the computer centre, the update of the SIS SRM files takes place. The update generates a listing for:

1) Interim records added or replaced

2) Final (completed) records added

3) Turnaround Form

4) Analysis results which were outside specified limits as defined by the user on the station supplementary file

5) Control Summary.

Detailed error messages will be printed on the appropriate reports. When the update is completed, the reports are sent by the Systems Operation section to the co-ordinator of the program.

Immediately after the update the data can be retrieved.

GENERAL

The SIS system contains four data files which are used to:

a. identify and describe sampling locations

b. define edit ranges for tests at sampling locations

c. define coding structures used in the SIS system

d. store the analyses and field data.

A description on each file is given below.

CODE DESCRIPTION FILE (CDF)

This file presently contains codes and descriptions for:

- ministry region - district
- ministry sampling programs
- SIS sample type codes
- unit of measure
- remark codes
- test name category
- test names
- external systems
- hydrologic code (STORET)
- water quality compliance - water use

The updating of this file is controlled by Systems and Laboratory Staff. Where warranted, Futher explanations are given on the above codes.

Test Name Code

The test name code of six alphanumeric characters is intended to be used as a short form unique identifer allowing field personnel to specify easily yet precisely the tests they wish performed on their particular sample or data they wish retrieved. In many instances the code also carries information on sample fractionation and treatment prior to analysis, as an aid to the field personel in selecting analyses.

Systematic coding of all types of chemical and microbiological analyses using the same format within the six available characters is not possible without reducing the basis of systematization to trivialities. Thus, the analytical procedures are broken into eight major categories:

1) Inorganic elements and compounds
2) General chemistry including organic carbon
3) Physical tests
4) Specific organics and Pesticides
5) Microbiological tests
6) AMES tests
7) Field data tests
8) Station location fixed parameters

Each of these categories utilizes the six characters of the code in the manner most meanifull to the application.

The systematization of this code is intended to allow someone who doesn't know the code to make a good guess at it, in order to gain entry to the data retrieval system with a reasonable hope of finding the correct code quickly. Although the code can be directly decoded in most cases, some knowledge of the analytical procedures involved may be required to identify and make sense of the exceptions. Referal to the full test description may be necessary in ambiguous cases.

The basic rules for encoding an analysis or procedure are as follows:

a. Elements are coded as their chemical symbols in the first two characters. Single letter symbols are placed in the first character with the second character repeating the first.

Single exception: TC = Total Coliform (not Technetium)

b. Compounds or ions are coded with the principal element in the first two positions (as in a) and suitable modifiers in characters three to six.

c. Analyses which cannot be coded by placing an element symbol in the first two characters may use any combination of characters which do not constitute a valid element symbol.

d. The following modifers indicate the fraction of sample upon which the procedure is performed:

A - ash

F - filtrate

H - head gases

P - particulate

X - extract

U - unfractionated/unfiltered

The following modifers indicate the severity of the subsequent analytical treatment prior to introduction to the measurement system:

R - reactive

T - total

Other reserved letters may be added to the above two lists as the need arises.

e. The severity of treatment modifier is always preceded by a fraction of sample modifer, and is always the last character in the code.

f. The fraction of sample code will be the last or next to last character in the code, depending on the absence or presence of a severity of treatment character.

For microbiological tests the first two characters of the test name code represents the group of organisms which are being examined (e.g., FC for Fecal Coliform) or a general heading which relates a group of tests (e.g., MT for microbial taxonomy tests). The character combination must not be identical to any other combination defined for other microbiological tests or test codes in other categories. The last four characters of the test name code are used to identify the portion of the group of organisms (e.g., YECA - for yeast - candida albicans) or tests (e.g., MTOXID for oxidase microbial taxonomic test). Also included in these four characters is any major method variation which will reflect on the reported results (e.g., MF, MPA, or PA). Where a genus has been defined in the first two characters the species may be defined in the last four characters.

The pesticides and herbicides (and such other industrial organics as appear in the analytical scans with them) are divided into classes arbitrarily coded using a letter as the first character and a number as the second character. The particular compound is futher identified by a mnemonic, acronym, or other set of characters derived from the name of the compound in character positions three to six. Sample fraction and severity of reaction are not coded as part of the test name code. For field data tests the first two characters of the test name code is divided into general groups as follows:

FA - field data : air

FB - field data : stream bank

FI - field data : industrial abatement

FT - field data : treatment

FG - field data : general

FH - field data : hydrogeological

FW - field data : water

Unit Of Measure Code

The “unit of measure” is a list of 1000 definitions coded from 000 to 999. The first part of this list defines a characteristic to be known as “dimensions”. The latter part of this list defines a characteristic to be known as “scale”. Associated with any lab result or field observation or other caculated numeric will be a “unit of measure code” consisting of six characters. The first three define “dimension” and the second three define “scale” (e.g., Sulphate - dimension = mg/L, scale = as SO4).

Ministry Sampling Program Code

All samples taken for the Ministry are assigned to a specific program. The Program code is used to identify the area of study for which the sample was taken.

The code consists of nine characters. The first two characters of the code represent a broad area of interest and are referred to as the program (e.g., Air Assessment And Abatement). The third thru fifth characters are used to define a study within a specific program. For example, the Air Quality Routine Monitoring study within the Air Assessment and Abatement program. The sixth and seventh characters are used to identify a project within a study and the eighth and nineth characters to define a sub-project within a project.

An example of the nine character Program code follows:

Program	02	Air Assessment And Abatement
Study	001	Air Quality Routine Monitoring
Project	01	HIVOL Project
Sub-project	01	Lead Survey

STATION DESCRIPTION FILE (SDF)

This file contains information about the sampling points or stations located throughout the Province of Ontario. Each record on the file contains a verbal description of a sampling point plus various codes designating its geographical location (e.g., latitude and longitude, UTM, ministry region - district, county - district, hydrologic codes etc.).

The SDF file is a sequential file stored on magnetic tape. The stations are placed in the file in ascending sequence by station ID number within program/ study code.

STATION SUPPLEMENTARY FILE (SSF)

This file contains reasonability and water (air) quality exceedence result ranges by tests within a program/ study.

The reasonability ranges are used to validate sample result values before the Sample Results Master File is updated.

The exceedence ranges are used to produce a report showing the percent of samples which exceeded provincial standards for tests tested at specific stations for a given set of water uses (water quality program).

SAMPLE RESULTS MASTER FILE (SRM)

This file contains sample submission and analytical results data. Each record on the file contains descriptive information on a sample (e.g., locations, sampling date and time, depth of sample, type of sample etc.) plus the analytical results of any physical, chemical or bacteriological tests performed on the sample. For each record, at least one test code and result value MUST be present.

There will be one magnetic tape file for each program/ study. This file is organized sequentially by station Id number. Within each station Id number the samples are stored in chronological order by the date of sampling, water depth (if applicable), sample type and field sample number.

GENERAL

The system has been set up to permit Ministry personnel the capability to retrieve data in a flexable manner using a data terminal connected to the Downsview Computing Centre. The block diagram on the next page illustrates the steps involved.

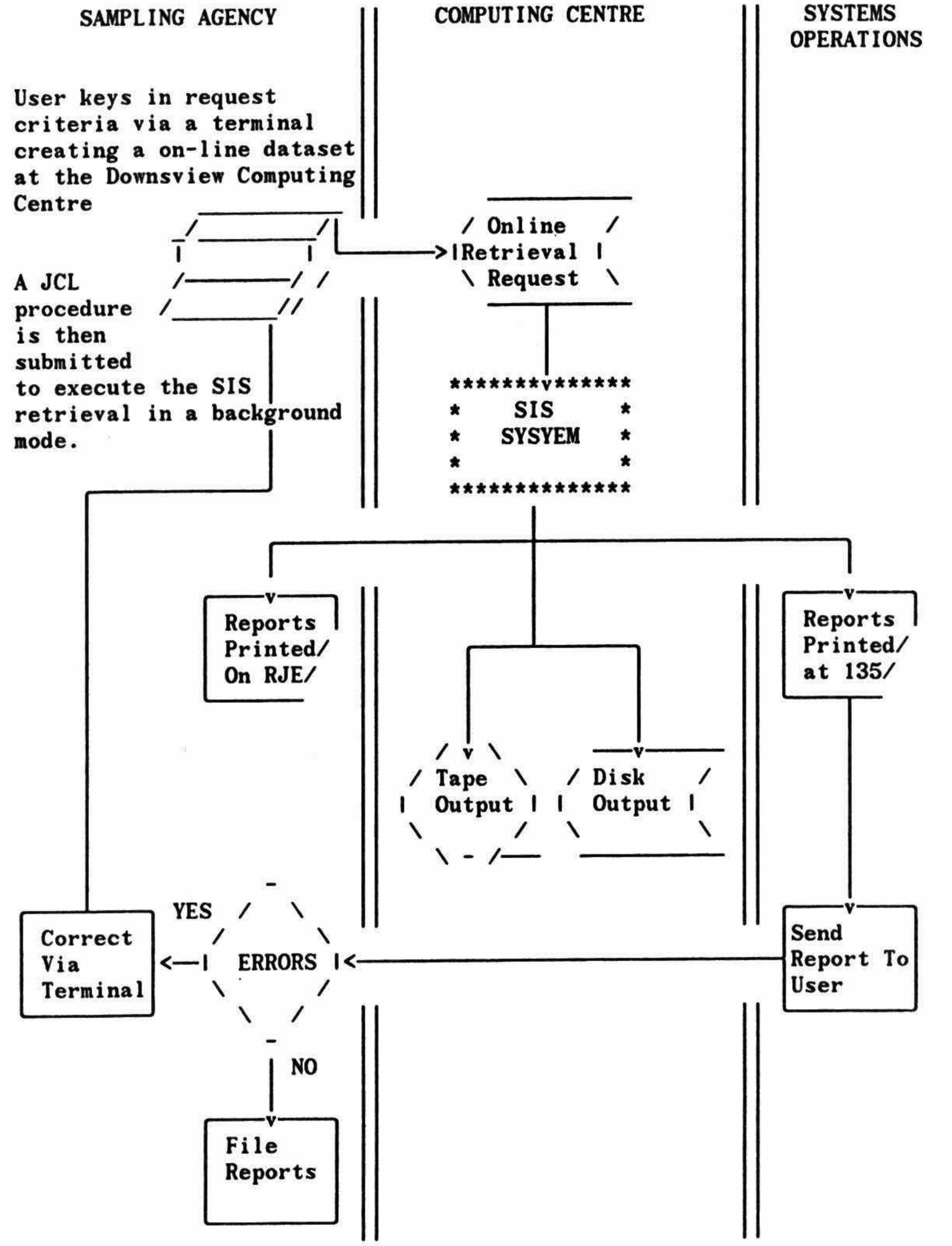
To retrieve data, the user of the system would create a data set (under TSO) containing the control information which would specify the selection criteria and processing options required. The format of this control file is described in the chapter: DATA RETRIEVAL. Once the data set has been created, the user has the option to execute a TSO procedure to edit the data set for syntax errors. Another procedure would be executed to submit the retrieval request for background processing.

To restrict the use of the system to authorized persons, each user must have an unique TSO USERID. This may be obtained by contacting the Systems Operations Section. Once this userid has been assigned, a retrieval authorization form signed by the users Director would be forwarded to Systems. Systems staff would then define the userid to the SIS system which would then permit the user to access the system.

The above procedure does not necessarily allow the user access the SRM datafiles. The USERID consists of six alphanumeric characters of which the first four characters represent the group to which the USERID belongs. For example, the USERID ENQLDD belongs to the group ENQL. All data sets created by one group cannot be accessed by users of another group unless authority is given. To access data on a SRM file owned by another group, a memorandum of authorization must be written by the manager responsible for the data authorizing a group access to the data. This memorandum would be sent to the Systems Operations Section.

The following describes the System output reports and files. Examples of the reports and file layout formats are found in Appendices A and B.

DATA RETRIEVAL


User keys in request criteria via a terminal creating a on-line dataset at the Downsview Computing Centre

A JCL procedure is then submitted to execute the SIS retrieval in a background mode.

RETRIEVAL REPORTS

Station Detail Report

The report consists of a detailed listing of sample data for 1 to 10 tests at a given station within a given period of time per printed line. Up to 300 tests may be displayed. The order of the tests on a page is established by the sequence that the user codes them in the control data file.

When more than 10 tests are retrieved for a given series of stations, the system will print the data for the first 10 tests for the first station, then the second group of ten tests for the first station etc., followed by the data for the second station.

Station Summary Report

This report has the same format as the Station Detail Report except that only the statistical summary for each test is printed.

Publication Detail Report

This report has the same format as the Station Detail Report except that two output computer pages are treated as one page. This report is usually produced by the Water Resources Branch for their annual "Water Quality Publication. The report is produced on tape, which is then passed through a photocomposition system.

Parameter Summary Report

In the Parameter Summary, data is arranged in sections by test names. There is a limit of 300 sections (tests). Within a section, data is arranged station by station. A section may encompass any number of stations. A single line presents the maximum, average and minimum values of a test at a station for the time period and depth range specifeid on the control cards. Successive lines present summaries at successive stations.

Selected Station Description Report

This report lists supplementary characteristics of the stations which have been retrieved.

Selected Test Name Description Report

This report lists supplementary characteristics of the tests for which data has been retrieved.

Selected SRM Dump Report

This report is used for checking the data stored for a particular sampling point and for a particular time period. One sample record is printed per page. The format is the same as that of the SRM update reports.

Water Quality Criteria Station Summary Report

The program compares sample results data to criteria levels stored on the Station Supplementary File or levels specified on the retrieval control cards and produces a series of tabular reports by station. Each table lists the percentage of sample results for each test requested which exceeds a criteria level for up to 8 water uses. Also listed is the average exceedence.

The report has the format of one station per page with all specified water use codes printed across the page (maximum of 8) and all requested tests listed from top to bottom down the page in sequence by test name code.

Water Quality Criteria Parameter Summary

This report is produced by a program reading in a file created by the Water Quality Exceedence Report program. The report consists od four graphs per page. Each graph expresses the percentage of stations in a given period of time (maximum of 4 seasonal date ranges) that fall within a pre-determined percentile range for a requested test - water use combination.

Water Quality Criteria Station Exceedence Report

This report would list the stations falling within each percentile range for a specified water use - test combination.

SPECIAL REPORTS

The following reports are requested via the SIS TSO procedure - LIST options:

Station Description File List Report

This report lists the SDF file for a specific program/ study.

Station Description File Abbreviated Report

This report lists the SDF file for a specific program/ study. Only the Site and Station type Descriptions are printed. 8 1/2 by 11 paper can be used to produce this report.

Code Description File List

The report lists all the codes contained on the CDF file.

Station Supplementary File List

This report lists the SSF file for a specific program/ study.

Station Period Of Record Report

This report will list the number of times a test was anaylzed at a particular station over a given period of time.

Outstanding Interim Records

This report will list all records (lists only the sequence part of each record) on a SRM file which have a status of interim.

SRM Database File Totals

This report will list all current SRM files in the system and specify the total number of records as well as the period of record for each current, historical or archive file. The report is listed at your termial in a on-line mode via option 'L' on the primary option menu. The totals are updated each week.

OUTPUT FILES

The following files are written onto tape (or disk) when requested thru the retrieval procedure. The DSNAME is catalogued. Files will be automatically scratched if uncatalogued.

Selected Sample Results Master File

This file is created upon request during a retrieval run and contains sample results records selected from the SRM file. Each record can contain up to 300 result answer areas. The format of this file is exactly the same as that of the master file (variable length record).

Selected Station Description File

This file contains a record for each station for which data was requested. The format of this file is exactly the same as that of the SDF master file.

SPSS 20 File

This file contains fixed length records as opposed to variable length records as on the selected SRM file. Each Record has 20 result answer areas. The arrangement of the analysis results on each record is determined by the order and position in which the test name codes have been specified upon retrieval. The first record on this file is a header record which contains an abbreviated heading for each of the requested tests in the result areas.

SPSS 40 File

This is basically the same as the SPSS20 file except that each record has 40 result areas.

FILE132 and FILE132A

These files have a record length of 132 characters and contain several different record formats. The FILE132 file has only record types “01”, “02”, “10” and “50” as defined below. The FILE132A file contains all record types defined below. An example of the output is in Appendix B.

Record Type 01: Is a control record specifying the number of tests requested in the retrieval and the number of Type 50 Records created per sample record. Each type 50 record holds 7 tests.

Record Type 02: Is a control record specifying the position of the test names as requested in the retrieval. Each type 02 record holds 7 tests. The number of type 02 records created is determined by the control field on record type 01 specifying the number of type 50 records.

Record Type 10: Is a detail record specifying the sequence key of an individual sample record.

Record Type 15 thru 41: Are detail records containing additional information stored for each sample record. See Appendix A for actual formats.

Record Type 50: Is a detail record containing the analytical data in the sequence specified on the type "02" record. Each type 4 record holds 7 tests. The number of type 50 records created is determined by the control field on record type 01 specifying the number of type 50 records.

REQUEST FOR D.C.C. ACCOUNT AND RETRIEVAL AUTHORIZATION

REQUEST DATE: yr ☐ mo ☐ dy ☐

PROCESS DATE: yr ☐ mo ☐ dy ☐ (Systems)

SEND TO: Office Of Systems Development
Systems Operations
135 St. Clair Ave. West, 5th Floor

SECT CODE: ☐☐ (Systems)

FROM: BRANCH: ______________________

SECTION: ______________________

ADDRESS: ______________________
____

RJE ID: ☐☐ (RMTxx)

TEL. NO: ______________________

CUSTOMER CONTACT (Co-ordinator): ______________________

RETRIEVAL AUTHORIZATION:

System To Be Accessed: ______________________ Module: ____________

ACTION REQUESTED:

☐ Add User ☐ Change ☐ Delete user

Userid Required	User Name (Please Print)	Access type	Min	Div	Br	Sec	Un	Access Code
			01					
			01					
			01					
			01					

____
Director

USER PROCEDURES

TABLE OF CONTENTS

INTRODUCTION 300-10-1
  GENERAL 300-10-1

LABORATORY FORM CODING 300-14-1
  GENERAL 300-14-1
  CODING REQUIREMENTS FOR SUBMISSION DOCUMENT 300-14-2
  CODING REQUIREMENTS FOR ANALYSIS DOCUMENT 300-14-5

DATABASE CO-ORDINATOR 300-18-1
  GENERAL 300-18-1

STATION DESCRIPTION FILE 300-20-1
  GENERAL 300-20-1
  COMPLETING THE STATION IDENTIFICATION FIELDS (LINE 1) . . . 300-20-2
  ADDING A NEW RECORD 300-20-3
  CHANGING AN EXISTING RECORD 300-20-12
  RE-ASSIGNING A STATION ID NUMBER 300-20-12
  DELETING AN EXISTING RECORD 300-20-12
  CREATING SDF TRANSACTIONS VIA 3270 TERMINAL 300-20-13
  BATCHING AND SUBMISSION OF SDF UPDATE FORMS 300-20-13
  OUTPUT REPORT AND ERROR CORRECTION PROCEDURE 300-20-15

STATION SUPPLEMENTARY FILE 300-30-1
  GENERAL 300-30-1
  CODING THE PROGRAM/STUDY & STATION IDENTIFICATION (LINE 1) 300-30-2
  ADDING A NEW RECORD 300-30-4
  CHANGING AN EXISTING RECORD 300-30-6
  DELETING AN EXISTING RECORD 300-30-6
  BATCHING AND SUBMISSION OF SDF UPDATE FORMS 300-30-7
  OUTPUT REPORT AND ERROR CORRECTION PROCEDURE 300-30-9

SAMPLE RESULTS MASTER FILE 300-40-1
  GENERAL 300-40-1
  SRM UPDATING FROM LIS 300-40-2
  SRM MAINTENANCE 300-40-4
    Completing The Sample Identification Fields 300-40-6
    Adding A New Record 300-40-7
    Changing An Existing Record 300-40-10
    Deleting An Existing Record 300-40-11
    Re-assigning a New Station ID, Sample Date or Sample No 300-40-12
    SRM Turnaround Update Form 300-40-13
    Creating SRM Transaction Via 3270 Terminal 300-40-13
  BATCHING AND SUBMISSION OF SRM UPDATE FORMS 300-40-14
  OUTPUT REPORT AND ERROR CORRECTION PROCEDURE 300-40-16

USER PROCEDURES

TABLE OF CONTENTS

GENERAL

This chapter describes the procedures for updating the SIS master files. As previously described in the chapter SYSTEM DESCRIPTION there are four master files used in the SIS system, namely:

- Code Description File (CDF)
- Station Description File (SDF)
- Station Supplementary File (SSF)
- Sample Results Master File (SRM)

Users may request that an update be done on the latter three files according to their Sampling Program Code. Systems Development controls the updating of the CDF file.

There is one physical file for both the SDF and SSF files. Data for all programs resides on these two files. Each program/ study has its own SRM master file and where volume warrents it, a historical file also exists. In this case, all data for the current year is kept on the master file. Any corrections to the current year data must be made by the end of the year. At this time, the data is merged with the historical data. In the data retrieval phase, the user has the option of selecting data from either the master file or the historical file.

File listings for the CDF, SDF, and SSF files are obtained thru the SIS TSO procedure. Systems Operations will not provide these.

To distinguish between the letter "O" and the number "0" (zero) and the letter i and the number 1 (one), when coding data on the update forms, the following should be used:

a. For the letter "O" - code with a "/" passing thru

b. For the letter "i" - code as a capital letter - "I"

GENERAL

There are two basic documents used in submitting a sample to the Laboratory for analysis, namely:

1) Submission Document

2) Request For Analysis Document.

Submission Document

This document is used to enter data that is common to all samples in a sample submission, such as; sampling program, sampler, etc.

Request For Analysis Document.

This document is used to enter the tests required. Data for up to six field samples may be entered. If there are more than six samples per submission, use as many sheets as required. Shaded areas are for laboratory use only. Such items as field sample number, time of sample, etc. are entered on this document.

Field Data

Provision is also being made to capture field results unique to a program. These data will be passed to the SIS system for storage. Field results cover such items as water temperature, sample depth, etc.

On the following pages, the individual fields on both forms are explained. A “M” following the field name means that the field is mandatory. A “C” means use the LIS Coding Manual to get the required code.

CODING REQUIREMENTS FOR SUBMISSION DOCUMENT

The following is to be used as a guide to filling in of the Submission Document. Actual requirements may change as the Laboratory feels necessary.

Submission Number (M)

This number is usually pre-printed on the form. If not, leave blank as Sample Reception will fill in.

From Sample No

Enter the first field sample number shown on the Request For Analysis and/or Field Data forms.

To Sample No

Enter the last field sample number shown on the Request For Analysis and/or Field Data forms.

Page

Enter the page number and total pages for all the attached documents in the submission.

Sample Program (M C)

Enter the sampling program code. This code comprises the following:

- program (2 characters)
- study (3 characters)
- project/activity (2 characters)
- sub project/activity (2 characters)

Lab (M C)

Enter the laboratory code where the tests are to be made.

Pri

Enter the priority of the submission, using "H" for high and "N" for normal. High priority requires written consent.

FD Type (C)

Enter the field data type code. This item must be entered if there are associated field data.

Users who wish to have field data captured must discuss their requirements with Lab and Systems Staff as unexpected results may arise in the storing of the data in the SIS.

Sampling Agency (M C)

Enter the organization code which identifies sampling agency. This code comprises the following:

- Ministry/Agency (2 characters)
- division (2 characters)
- branch/region (2 characters)
- section (2 characters)
- unit (2 characters)

Vote/Item (C)

Enter the vote and item codes (optional) associated with the sampling program.

Date Submitted (M)

Enter the numeric day, month and year, in that order (e.g., 24/05/83) when the submission was sent to the laboratory.

Municipal Code

Enter the municipal code as required.

Munipipal Name

Enter the municipal name as required.

Name Of Sampler (M)

Enter surname followed by initial.

Phone (M)

Enter the phone number, starting with the area code.

Client Code or Report To Name (M C)

Enter your client code OR enter your name, phone number and address if you do not have a client code.

Copies To

Enter the names and addresses of clients who are to receive copies of the results of tests OR enter their client code.

CODING REQUIREMENTS FOR ANALYSIS DOCUMENT

The following is to be used as a guide to filling in of the Request For Analysis Document. Actual requirements may change as the Laboratory feels necessary.

Page

Enter page number.

Field Sample Number (M)

Enter a unique field sample number. This number must be unique on specific date for a given station ID/Location.

Con Sent (M)

Enter the number of containers sent with the field sample. If none, enter "0".

Sample Data (M)

Enter the numeric day, month and year, in that order (e.g., 23.05.83) when the sample was taken.

Time

Enter the time when the sample was taken, using the 24 hour method.

Zone

Enter the time zone in which the sample was taken.

Sample Location/Station ID (M)

Enter the appropriate structured numeric code, depending on the sampling program.

Sample Location Description (40 characters)

if required, enter a location description to futher qualify the location ID code.

Sample Description (M) (32 characters)

Enter the description of the sample such as soil etc.

Test Group (C)

Enter up to three test groups.

Deletions From Group (C)

Enter test deletions from the group using the same line as the group being deleted from.

Individual Test

Enter individual tests.

NOTES ON TESTS:

a) Each test code must be preceded by a "+" or "-" sign to add or delete a test.

b) Each test group code must be preceded by a "G".

Ministry
of the
Environment
Ontario

Submission

Lab. use Only

Submission No.	From Sample No.	To Sample No.	Page	of

Sample Program Code	Lab	Pri	FD Type	Sampling Agency	Vote	Item	Date Submitted / /	

Mun. Code	Municipal Name	Name of Sampler	Phone — —
Client Code 1	Report to (Name)	Phone — —	Establishment
Address	City	Province (Country)	Postal Code —

------ **Copies To** ------

Client Code 2	Name	
	Establishment	
	Address	
City	Province (Country)	Postal Code

Client Code 3	Name	
	Establishment	
	Address	
City	Province (Country)	Postal Code

Client Code 4	Name	
	Establishment	
	Address	
City	Province (Country)	Postal Code

Client Code 5	Name	
	Establishment	
	Address	
City	Province (Country)	Postal Code

Ministry
of the
Environment
Ontario

Request For Analysis

Shaded Area
For Lab Use Only

Submission No.	Page		of	

1

Field Sample No.	Sample Type	Lab Sample Numbers				
Con. Sent	Con. Miss.	Sample Date	Time	Zone 5	Remarks	
Sample Location / Station ID					Sample Location Description	
			1		Sample Description	
Test Group		Deletions From Group			Individual Tests	

2

Field Sample No.	Sample Type	Lab Sample Numbers				
Con. Sent	Con. Miss.	Sample Date	Time	Zone 5	Remarks	
Sample Location / Station ID					Sample Location Description	
			1		Sample Description	
Test Group		Deletions From Group			Individual Tests	

3

Field Sample No.	Sample Type	Lab Sample Numbers				
Con. Sent	Con. Miss.	Sample Date	Time	Zone 5	Remarks	
Sample Location / Station ID					Sample Location Description	
			1		Sample Description	
Test Group		Deletions From Group			Individual Tests	

4

Field Sample No.	Sample Type	Lab Sample Numbers				
Con. Sent	Con. Miss.	Sample Date	Time	Zone 5	Remarks	
Sample Location / Station ID					Sample Location Description	
			1		Sample Description	
Test Group		Deletions From Group			Individual Tests	

5

Field Sample No.	Sample Type	Lab Sample Numbers				
Con. Sent	Con. Miss.	Sample Date	Time	Zone 5	Remarks	
Sample Location / Station ID					Sample Location Description	
			1		Sample Description	
Test Group		Deletions From Group			Individual Tests	

1448 5/84

GENERAL

This section describes the responsibilities of the Database Co-ordinator.

SIS sample result data are stored on a series of separate master files each pertaining to a given study being conducted within a Ministry program (e.g., Great Lakes study within the Water Management program). To ensure the integrity of the data it will be necessary to assign to each master file (program/ study) a person who will be responsible for the co-ordination and control of all input and error correction activity.

The co-ordinator will not necessarily carry out the actual coding of SDF, SSF or SRM update forms, but will act as a central control function to ensure that proper procedures are followed.

Users carrying out retrievals of data would contact the Database Co-ordinator for the current status of the SDF, SRM files.

To aid the Co-ordinator in answering some questions which may arise, he or she should produce an updated copy of the

1) SRM Period Of Record Report

2) CDF Listing

3) SRM Database File Totals

every two months.

All update listings for a specific program/ study will be mailed to the Database Co-ordinator for subsequent distribution to other Regional offices etc.

GENERAL

Right-justify numeric data or align on decimal point (where shown). Values to the right of the decimal are to be zero filled for all values except card types 91-95 where the value entered is to reflect the actual value to be stored. It is the responsibility of the user to check all output listings for error messages and take the appropriate action.

The location of a sampling point can be identified by a station ID comprising of up to 20 numeric characters coded in a specific format. ALL station ID's related to a given study (i.e. with results data stored on the sample sample results master file) must use the same format and methodology.

The station ID can refer to a site specific location, or to a general geographical area. The former is normally used where routine monitoring is carried out while the latter can be used to define an area such as Metro Toronto where samples would be taken on a complaint basis.

The River Basin Station ID format is the most commonly used format for coding station ID's. This format consists of 11 characters divided into 4 sub-fields:

Basin - 2 characters
Terminal Stream - 4 characters
Station Number - 2 characters
Station type - 2 characters

where each sub-field has pre-defined values.

When possible, this format should be used as it allows greater flexibility in data storage and retrieval.

It should be noted that data for a specific program/ study will not be stored in the SIS until the Station ID format has been decided upon. Once this has been done, station ID codes are to be assigned to each sampling point and then coded on the laboratory Request For Analysis form when submitting samples. Systems Development is also to be notified of the station ID format to be used.

Before data can be retrieved from the SIS, the station ID codes must be coded on the SDF forms as described in this section and placed on the SDF file.

Other station ID formats now in use are found in Appendix C.

COMPLETING THE STATION IDENTIFICATION FIELDS (LINE 1)

The purpose in filling in these fields is to identify a specific station record to be added, changed or deleted.

Program Code

This Consists of only the program/ study portion of the Ministry's sampling program code. This code must be defined on the Code Description File before any SDF records can be added. Valid codes are printed on the CDF Listing.

Station ID

There is a maximum of 20 characters which can be used to define the station ID number. This field on the update form is pre-printed according to the format of the station ID for the program code.

If the General Format Update form is used, (20 characters pre-printed for the station ID) the value is to be left justified.

Please note that once a station ID structure exists for a specific program/ study, everyone must conform to that structure.

ADDING A NEW RECORD

NOTE: The only mandatory fields to add a new record are the program/ study, station ID, REGION code and Setup Date (card type 22). UTM co-ordinates should be coded if known.

1) fill in the program/ study and Station ID fields (line 1)

2) enter an "A" in column 26 of line 2.

3) fill in the appropriate data fields as required.

CARD TYPES 01-09

Body of Water/Site Name

Enter the name of the Body of Water or Site where the station is located. Description is limited to 40 characters.

Sample Point Description

Enter a verbal description of the sampling point. If the description extends beyond column 79 of card type "02" (40 characters), continue the description on card type "03". Do not break words or hyphenate words that extend onto card type "03".

Station Type Description

The user has the option of filling in a numeric value (zero) filled) in columns 40-42 for different default descriptions defined to the SIS system, or actually coding in a alphabetic description commencing in column 40.

* When option 1 is selected, the system will replace the numeric value by a default description (not implemented yet).

Plant Description

(for utilities only) Enter the name of the Company that owns the property upon which the station is located.

Municipality/Township

The user has the option of coding the description and also the municipal code contained on card type “22” (columns 22-23) or coding just the municipal code on card type “22”.

In the former case, both are accepted as is, with the numeric code checked against the Water Well Information System Municipal File.

* In the latter case, the code is checked against the Water Well Information System Municipal File and the Description for the numeric code is inserted on card type “06” (not implemented yet).

NOTE: The municipal description on the Water Well Municipal File is 48 characters. If the latter option above is selected, the last 8 characters of the description will be truncated.

Major Basin Code And Description

Enter the code (see CDF listing - Hydrologic Code) of the major basin in which the station is located. Enter The corresponding description.

Minor Basin Code And Description

Enter the code (see CDF listing - Hydrologic Code) of the minor basin in which the station is located. Enter The corresponding description.

Terminal Stream Code And Description

Enter the code (see CDF listing - Hydrologic Code) of the minor basin in which the station is located. Enter The corresponding description.

Distance (Kilometers)

Enter the distance in kilometers between the station location and the mouth of the terminal stream.

CARD TYPE 21

Latitude/Longitude - UTM Co-ordinates

Enter either or both the latitude/longitude or UTM (Universal Transverse Mercator Grid) co-ordinates where the station is located. UTM co-ordinates are preferred. The system will convert the coded co-ordinates to the co-ordinates which are missing.

Precision

This 1 digit, numerical field indicates the precision with which the location of a station is known. Corresponding values are given below.

RADIUS (r - Metres)	CODE
r <= 1m	0
1m < r <= 3m	1
3m < r <= 10m	2
10m < r <= 30m	3
30m < r <= 100m	4
100m < r <= 300m	5
300m < r <= 1km	6
1km < r <= 3km	7
3km < r <= 10km	8
r <= 10km	9

Ministry Region/District Code

MANDATORY CODE: Enter the appropriate region code in which the station is located. If there is no district, leave blank. Valid district codes are found on the CDF listing. District value is optional.

region code 01 - South West (London)

region code 02 - West Central (Hamilton)

region code 03 - Central (Don Mills)

region code 04 - South East (Kingston)

region code 05 - North East (Sudbury)

region code 06 - North West (Thunder Bay)

Confidential

This allows specific stations defined to have their data declared confidential. Upon retrieval of sample data this field is used to either exclude or include selected data.

CARD TYPE 22

Municipal Code

see description of card types 01-09 under Municipal/Township.

Concession/Lot

enter if required.

Electorial District

not used at present

Sampling Agency Code

Enter the appropriate code as defined in the Laboratory Information System.

Set/Up Date

MANDATORY FIELD: enter the date that the station was established. Year, month and day value must be coded.

The date entered must reflect a date on or before which actual sample data is stored on the Sample Result Master file. If data is stored for which any sample date is before the specified Set/Up date, the data is non-retrievable until the Set/Up date is changed.

Termination Date

enter date on which sampling ceased at the station.

NOTE: The setup date and the termination date are used in the data retrieval to determine if a station should be excluded from the selection process.

CARD TYPE 31 & 32

Hydrologic Information System Interface - Stream Flows

NOTE: These card types are used only by program/ studies collecting water samples from the Province's rivers and streams.

Introduction

At the present time, programs involving loadings require the manual caculation and insertion of daily streamflow values onto the Sample Results Master File. The purpose of these card types are to interface the Hydrologic Information System (HIS) and the SIS system with respect to the following:

1) To provide the capability to insert flow values in each record contained on a SPSS formatted file created by the SIS retrieval phase, and optionally to be able to generate additional records with flows for each day where there is no sample record present.

2) To create sample result change records enabling flow values to be placed on the SRM file in a subsequent computer run.

Relationship Of HIS Station To SIS Station

For the conversion of daily discharge values in the HIS system to the SIS system a relationship must be defined between a SIS station and a HIS station. This can be stated in one of two ways:

1) a relationship where there is a one-to-one correspondence between a SIS station and a HIS station. This will occur when the SIS and the HIS station are considered to be in the same geographic location and therefore the mathematical expression would be

   $$Q = A$$

   where Q = discharge in M3/second at the sampling station
   A = discharge in M3/second at the stream station

2) a relationship where more than one HIS station up-stream from the SIS station must be used as no one-to-one correspondence exists. For example:

```
                . .
                X HIS station B      .
                 .                  .
                 .                X  HIS station B
                 ..  canal         .
                 .  .           .
                 .   .....    .
shore    ......  .           .v
 line    .     .v.            .
   .....          .           .
                   .         X SIS station
                    .......v.................
```

Arrow represents direction of water flow.

In caculating the daily discharge value for the SIS station shown on the above diagram, we would have to consider the following:

1) discharge at HIS station A

2) discharge at HIS station B

3) amount of discharge from HIS station B flowing through the canal (assume 1/4).

therefore, the mathematical expression may be stated as

$$Q = A + (B * 0.25)$$

These expressions when defined for a SIS station are then stored on the SDF master file and are used by the Flow Conversion module to caculate daily discharge values for a SIS sampling station.

In the case where more than one HIS station is defined in the mathematical expression, the associated daily flow values are caculated and inserted on the SPSS output file. The SRM Transaction records when generated will have a remark of “045” for “estimate”.

<u>HIS Station Numbers (card type 31)</u>

Enter the appropriate HIS station numbers to be used in the conversion formula. Stations must be entered in consective positions and in ascending order. The program interprets the first blank field as the end of the list. A maximum of six HIS stations can be specified.

For each HIS station entered, the corresponding letter (A,B,C,D,E, or F) above the entry must be used as a variable in the conversion formula on card type 32.

HIS Conversion Formula (card type 32)

Enter the appropriate mathematical expression showing the relationship netween the SIS sampling station and the HIS streamflow stations defined on card type 31.

For examp:e

$$Q = A + (((B * C) / (2.08 + (8 * B))) - 0.25)$$

where Q = discharge in M3/sec at the sampling station (this letter is already printed on the SDF update form, therefore only the right part of the equation need be coded).

A,B,C - represent variables corresponding to the letters above the HIS station numbers on the card type 31.

Please note that no more than two spaces are allowed between characters.

Valid operators are:

+ : addition

- : subtraction

/ : division

* : multiplication

(: left parenthesis

) : right parenthesis

NOTE: When using a transaction type code of "C" to change either a card type "31" or "32", both card types must be re-coded.

CARD TYPE 35

This card is used to code the utility information as contained in the Utility Monitoring Information System:

Works Type

Operating Authority

Treatment type Codes (Major and Minor)

CARD TYPE 41 - 43 (NOT USED AT PRESENT - LEAVE BLANK)

These cards are used to define corresponding station identifiers in other computer systems. Each entry consists of a “system identifier” and a “station identifier”. Valid system identifiers are found on the CDF Listing.

The station identifier is to be entered left justified with leading zeros inserted where required (e.g., a station ID of six characters and a value of “10” would be entered as “000010”. Values are to be entered in ascending order by system ID.

CARD TYPE 50

This card is used to specify any user data which cannot be coded in other fields. The SIS system treats this field as comments and does not use the field in any processing.

CARD TYPE 91 - 95

Fixed Parameters

If required enter the test (parameter) code and accompanying values followed by the second parameter on card type “92”, etc.

Parameter

Must be a code starting with the characters “SD” and defined on the CDF file.

Unit Of Measure

Unit (mandatory) for each test (parameter) coded. Enter appropriate unit of measure value selected from the CDF Listing.

Remark

If required, enter numeric value selected from CDF Listing.

Alphabetic Value “AL”

If the value entered in the value field (columns 43-48 only) is a non-numeric value (e.g., RED) code a “A” in this field, else leave blank.

Number Of Decimals “DEC”

Leave this field blank.

Value

Enter a numeric value aligned with the decimal. No zero filling is required. If the value is negative, place a “-” in column 43 and if the value is greater than 9,999 use the exponent (e.g., E+01 or E-01).

CHANGING AN EXISTING RECORD

1) fill in the station identification field (line 1)
2) enter a "C" in column 26 of line 2
3) code only the field or fields to be changed. Do not code any field that is to remain unchanged. If a field is to be reset to spaces (alphabetic fields) or zeros (numeric fields) place all "*" in the field. For card types 01-09 an "*" is required in column 40 only.
4) to delete a fixed test (parameter) enter the test code and place "DEL" in the remark field.

RE-ASSIGNING A STATION ID NUMBER

1) fill in the station identification field (line 1)
2) enter a "R" in column 26 of line 2
3) code the new station id number left justified and zero filled in the BOW/Site description field (line 2)
4) the remainder of the form is to remain blank
5) the re-assign fumction only applies to station id within the same program/study.

DELETING AN EXISTING RECORD

1) fill in the station identification field (line 1)
2) enter a "D" in column 26 of line 2
3) leave the rest of the form blank.

CREATING SDF TRANSACTIONS VIA 3270 TERMINAL

Users which have access to a 3270 type terminal may input additions or changes at their terminal. Systems Operations will then use these transactions created by the user to update the SDF file. Refer to the Section SIS PROCESSING - SUPPORT OPTION in the DATA RETRIEVAL Segment of this Manual.

BATCHING AND SUBMISSION OF SDF UPDATE FORMS

1) all coded documents must be batched by program/ study codes prior to being sent to the Systems Operations Section for processing.

2) fill in a “Request TO Keypunch” form (obtainable from the Systems Section) for the following items and attached it to the first sheet in the batch:

   - date
   - number of sheets in batch (MAXIMUM OF 50 IN ANY ONE BATCH)
   - estimated cards to be keypunched
   - program/study code and description (in description part of form)
   - prepared by

3) computer updates will be carried out upon demand.

4) all documents which have been keypunched should be retained in the originating branch/section.

EXAMPLE OF THE REQUEST TO KEYPUNCH FORM

REQUEST TO KEYPUNCH

Division: ______________________ Date: __________
Requested by: ______________________ Tel. No: __________

Job Identification and Remarks

Batch No.	Keypunch Batch Number	Batch Total
No of Docs	App. Cards	Actual Cards
Prepared by Date	Keypunched by Date	Verified By Date

OUTPUT REPORT AND ERROR CORRECTION PROCEDURE

The SDF update program produces a transaction update report. This report will list in sequence by program/ study, station ID, all the card transactions processed in an update run as well as informative messages.

Any errors found for a specific station will cause all processing for that station to terminate.

All reports produced in any one update are to be checked page by page by the user to ensure that the appropriate action was taken. It is the responsibility of the user to correct any errors listed and re-submit them.

Output reports returned to the user are to be dated and kept on file (in sequence) for a period of 4 months. If problems arise in the update procedure, the Systems Development staff will require these listings to enable them to take corrective action.

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Sample Information System

S D F File (GENERAL)

PGM STUDY 1 5
STATION IDENTIFIER 6 15 25

26 A,CorD
27 28

0 1	BODY OF WATER/SITE NAME		40 50 60 70 79
0 2	SAMPLE POINT DESCRIPTION PART 1		
0 3	PART 2		
0 4	STATION TYPE DESCRIPTION		
0 5	PLANT DESCRIPTION		
0 6	MUNICIPALITY/TOWNSHIP		
0 7	MAJOR BASIN	29	40 50 60 70 79
0 8	MINOR BASIN	DISTANCE 33 (KILOMETERS) 39	
0 9	TERMINAL STREAM		

27
2 1 LATITUDE: DEG 29, MIN, SEC 36 — LONGITUDE: DEG 37, MIN, SEC — PR 46 — U. T. M.: ZONE 47, EASTING 49 56, NORTHING 57, PR 65 — MINISTRY: REGION 66, DISTRICT 68 — CONFID 71

2 2 MUNIC CODE 29 33 — CONCESSION 34 40 — LOT 41 — ELECT DISTRICT 44 — SAMPLE AGENCY: MIN DIV BR SEC UNIT 47 56 — STATION DATE: SETUP YY MM DD 57 62, TERMINATION YY MM DD 63 68 — 69 78

HIS CONVERSION STATIONS
3 1 29 A 35 — 36 B 42 — 43 C 49 — 50 D 56 — 57 E 63 — 64 F 70

HIS CONVERSION FORMULA
3 2 29 Q = 40 50 60 70 78

SYS ID 29 — SECONDARY STATION CODE 31 50 — SYS ID 51 — SECONDARY STATION CODE 53 72
4 1 — 1 — 2
4 2 — 3 — 4
4 3 — 5

PARAMETER GRP 29 TEST 35 UNIT 38 REMARK 41 AL DEC — VALUE 43 50 EXPONENT ± 54 — PARAMETER GRP 55 TEST 61 UNIT 64 REMARK 67 AL DEC — VALUE 69 76 EXPONENT ± 80

27	GRP		EXPONENT	GRP		EXPONENT
9 1	S D		E	S D		E
9 2	S D		E	S D		E
9 3	S D		E	S D		E
9 4	S D		E	S D		E
9 5	S D		E	S D		E

1673C

```
SAMPLE INFORMATION SYSTEM             STATION DESCRIPTION FILE UPDATE REPORT                                   RUN DATE:  JAN 28 81         PAGE:     1

  PROGRAM:  03   INDUSTRIAL ASSESSMENT
    STUDY:  003  INDUSTRIAL COMPLAINT SAMPLES
                          C A R D   I M A G E   A N D   M E S S A G E S
         1    1    2    2    3    3    4    4    5    5    6    6    7    7    8         ACTION
----5----0----5----0----5----0----5----0----5----0----5----0----5----0----5----0         TAKEN



030033110                A01           CITY OF TORONTO EAST                               (ADDED RECORD)
030033110                A02           CITY OF TORONTO EAST OF YONGE ST
030033110                A04           NONSPECIFIC AREA SOURCE
030033110                A06           METRO TORONTO
030033110                A21                  17633000 4836000  03
030033110                A22                  0101030201801001


030033120                A01           BOROUGH OF EAST YORK                               (ADDED RECORD)
030033120                A02           AREA WITHIN MUNICIPAL BOUNDRY OF
030033120                A03           EAST YORK
030033120                A04           NONSPECIFIC AREA SOURCE
030033120                A06           METRO TORONTO
030033120                A21                  17 635000 4839000  03
030033120                A22                  0101030201801001


030033130                A01           CITY OF NORH YORK EAST                             (ADDED RECORD)
030033130                A02           AREA WITHIN MUNICIPAL BOUNDRY OF
030033130                A03           NORTH YORK EAST OF YONGE ST
030033130                A04           NONSPECIFIC AREA SOURCE
030033130                A06           METRO TORONTO
030033130                A21                  17 633000 4844000  03
030033130                A22                  0101030201801001


030033140                A01           BOROUGH OF SCARBOROUGH                             (ADDED RECORD)
030033140                A02           AREA WITHIN MUNICIPAL BOUNDRY OF
030033140                A03           SCARBOROUGH
030033140                A04           NONSPECIFIC AREA SOURCE
030033140                A06           METRO TORONTO
030033140                A21                  17 641000 4844000  03
030033140                A22                  0101030201801001


030033210                A01           BOROUGH OF ETOBICOKE                               (ADDED RECORD)
030033210                A02           AREA WITHIN MUNICIPAL BOUNDRY OF
030033210                A03           ETOBICOKE
030033210                A04           NONSPECIFIC AREA SOURCE
030033210                A06           METRO TORONTO
030033210                A21                  17 616000 4833000  03
```

GENERAL

This file contains reasonability and water (air) quality exceedence result ranges by test name within station ID within program/ study.

The usual method used in editing results that have been passed to the SIS is through a physical scan of the data for any possible errors, The problem with this method is that unless people are familiar with the type of analysis results to be expected, the values would appear only as a number to the individual. Therefore, the main purpose of the range editing is to check results for reasonability and to flag results outside the range for follow-up through manual checking.

The quality exceedence ranges are used to compare result values to allowable limits set by the Ministry.

Once the user has defined the appropriate ranges on the SSF file, the range editing function is automatically performed when the SRM file is updated. The quality exceedence function is performed within the data retrieval phase upon request.

Processing is performed at specific levels. The levels specified below, are automatically assigned by the system through the manner in which the station identifier and program/ study fields have been coded on the SSF update form. For those program/ studies which use a River Basin or Great Lakes station ID format, levels 1, 2 and 3 thru 6 may be used, all others use levels 1, 2 and 6 only.

CODE		RIVER BASIN STATION ID	GREAT LAKES STATION ID	ALL OTHER ID FORMATS
6	start at	station type	station number	full station id
5		station number	station type	-
4		minor basin	sub-section	-
3		major basin	body of water	-
2		study level	study level	study level
1		program level	program level	program level

CODING THE PROGRAM/STUDY & STATION IDENTIFICATION (LINE 1)

According to the station identifier format for your program/ study, choose the level for which ranges are to be defined and then fill in line one on the SSF form using the description below.

a. River Basin Format

1) Study Wide - level 2

Fill in the PGM-STUDY field with the appropriate program/ study code, zero filling the value. Leave the station identifier field blank.

2) Terminal Basin - level 3

Fill in the PGM-STUDY and Terminal Basin fields, zero filling all values. The remaining fields are to be blank.

3) Terminal Stream - level 4

The PGM-STUDY, Terminal Basin and Terminal Stream fields are to be coded and zero filled. The remaining fields to remain blank.

4) Station Number - level 5

The PGM-STUDY, Terminal Basin, Terminal Stream, and Station Number fields are to be coded and zero filled. The remaining fields to remain blank.

5) Station Type - level 6

The PGM-STUDY, Terminal Basin, Terminal Stream, Station Number, and Station type fields are to be coded and zero filled. The remaining fields to remain blank.

b. Great Lakes Format

1) Study Wide - level 2

Fill in the PGM-STUDY field with the appropriate program/ study code, zero filling the value. Leave the station identifier field blank.

2) Body of Water - level 3

Fill in the PGM-STUDY and BOW and Sub-section fields, zero filling all values. The remaining fields are to be blank.

3) Station Type - level 5

The PGM-STUDY, BOW, Sub-section, and Station type fields are to be coded and zero filled. The remaining fields to remain blank.

4) Station Number - level 6

The PGM-STUDY, BOW, Sub-section, Station type, and Station Number fields are to be coded and zero filled. The remaining fields to remain blank.

c. All Other Formats

1) Study Wide - level 2

Fill in the PGM-STUDY field with the appropriate program/study code, zero filling the value. Leave the station identifier field blank.

2) Station ID - level 6

Fill in the PGM-STUDY field with the appropriate program/study code, zero filling the value. Fill in the actual station identifier as defined on the SDF file - left justified.

ADDING A NEW RECORD

1) fill in line one on the form as described in the previous section

2) enter a "1" in column 30 if a reasonability (edit) range is to be coded; otherwise, enter an "2" for a compliance range.

3) enter a "A" in column 31

4) enter the appropriate test name (parameter) left justified

5) code the ranges for a reasonability range - enter only range-1. If a compliance range is to be entered, the user may enter range-1 (permissable) and range-2 (desirable).

The value field has the following format:

- if a negative value is to be entered, place a "-" in the column with a minus sign printed over it.
- enter the numeric value in the appropriate minimum or maximum field aligning on the decimal. No zero filling is required
- if the value is greater than 9999.999 or less than 0.999, enter the exponent value.

Examples:

VALUE	-	value	E+-	
-99.01	-	99.01		
96387.01		9638.701	E+	01
-0.0005	-	0.005	E-	01

NOTE: decimal pre-printed on form

If only the minimum value is coded, it is assumed that all SRM result values have to be greater than or equal to the value. If only the maximum value is coded, it is assumed that all SRM result values have to be less than or equal to the value. If both the mimimum and maximum values are coded, all SRM result values have to be greater than or equal to the minimum value and less than or equal to the maximum value.

6) Season field - if the values coded apply to the full year, then this field is to remain blank. However, if the values coded apply to a specific season, then code the appropriate season code(e.g., 1- spring, 2 - summer, 3 - fall, and 4 - winter).

7) Criteria code (only for compliance ranges) - this field is coded to specify the water use conditions for which the ranges apply. See the CDF Listing for valid codes.

CHANGING AN EXISTING RECORD

1) fill in line one on the form as described previously, matching the sequence of a record already on the SSF file.

2) enter the appropriate card code in column 30

3) enter a "C" in column 31

4) enter the test name to which the change is to be made

5) code the appropriate season and/ or criteria code if applicable

6) code the appropriate range

   If a complete range is to be reset, then fill the range with all "*". When a range is to be changed, both the minimum and maximum value have to be re-coded (spaces excepted for one or the other).

DELETING AN EXISTING RECORD

1) fill in line one on the form

2) enter the appropriate card code in column 30

3) enter a "D" in column 31

4) enter the test name

BATCHING AND SUBMISSION OF SDF UPDATE FORMS

1) all coded documents must be batched by program/ study codes prior to being sent to the Systems Operations Section for processing.

2) fill in a "Request TO Keypunch" form (obtainable from the Systems Section) for the following items and attached it to the first sheet in the batch:

   - date
   - number of sheets in batch (MAXIMUM OF 50 IN ANY ONE BATCH)
   - estimated cards to be keypunched
   - program/study code and description (in description part of form)
   - prepared by

3) computer updates will be carried out upon demand.

4) all documents which have been keypunched should be retained in the originating branch/section.

EXAMPLE OF THE REQUEST TO KEYPUNCH FORM

REQUEST TO KEYPUNCH

Division: ______________________ Date: __________
Requested by: ______________________ Tel. No: __________

Job Identification and Remarks

Batch No.	Keypunch Batch Number	Batch Total
No of Docs	App. Cards	Actual Cards
Prepared by Date	Keypunched by Date	Verified By Date

OUTPUT REPORT AND ERROR CORRECTION PROCEDURE

The SSF update program produces a transaction update report.

All reports produced in any one update are to be checked page by page by the user to ensure that the appropriate action was taken. It is the responsibility of the user to correct any errors listed and re-submit them.

Output reports returned to the user are to be dated and kept on file (in sequence) for a period of 4 months. If problems arise in the update procedure, the Systems Development staff will require these listings to enable them to take corrective action.

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Sample Information System

S S F File (GENERAL)

PGM 1 **STUDY** 5 **STATION IDENTIFIER** 6 15 25

PGM / STUDY 1 2 3 4 5	STATION IDENTIFIER 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

CARD CODE: 1 = REASONABILITY 2 = COMPLIANCE

TANS: A = ADD C = CHANGE D = DELETE

SEASON:
1 = SPRING
2 = SUMMER
3 = FALL
4 = WINTER
BLANK = ALL SEASONS

CARD CODE	TANS	PARAMETER			RANGE 1						RANGE 2					SEASON	CRITERIA CODE
					MINIMUM			MAXIMUM			MINIMUM			MAXIMUM			
		GROUP	TEST		VALUE –	EXPONENT + –	> <	VALUE –	EXPONENT + –		VALUE –	EXPONENT + –	> <	VALUE –	EXPONENT + –		
30	31	32 33	34 35 36 37	38	39 40 41 42 43 44 45 46	47 48 49 50	51	52 53 54 55 56 57 58 59	60 61 62 63	38	39 40 41 42 43 44 45 46	47 48 49 50	51	52 53 54 55 56 57 58 59	60 61 62 63	64	65 66
				1	.	E		.	E	2	.	E		.	E		
				1	.	E		.	E	2	.	E		.	E		
				1	.	E		.	E	2	.	E		.	E		
				1	.	E		.	E	2	.	E		.	E		
				1	.	E		.	E	2	.	E		.	E		
				1	.	E		.	E	2	.	E		.	E		
				1	.	E		.	E	2	.	E		.	E		
				1	.	E		.	E	2	.	E		.	E		
				1	.	E		.	E	2	.	E		.	E		
				1	.	E		.	E	2	.	E		.	E		
				1	.	E		.	E	2	.	E		.	E		
				1	.	E		.	E	2	.	E		.	E		
				1	.	E		.	E	2	.	E		.	E		
				1	.	E		.	E	2	.	E		.	E		
				1	.	E		.	E	2	.	E		.	E		
				1	.	E		.	E	2	.	E		.	E		
				1	.	E		.	E	2	.	E		.	E		
				1	.	E		.	E	2	.	E		.	E		
				1	.	E		.	E	2	.	E		.	E		
				1	.	E		.	E	2	.	E		.	E		
				1	.	E		.	E	2	.	E		.	E		
				1	.	E		.	E	2	.	E		.	E		
				1	.	E		.	E	2	.	E		.	E		
				1	.	E		.	E	2	.	E		.	E		
				1	.	E		.	E	2	.	E		.	E		

```
SAMPLE INFORMATION SYSTEM          STATION SUPPLEMENTARY FILE ERROR REPORT                   RUN DATE:  13 MAR 81       PAGE:   01

PROGRAM:  01     WATER MANAGEMENT
  STUDY:  002    INLAND WATER QUALITY MONITORING

                          C A R D   I M A G E   A N D   M E S S A G E S              ERROR
         1    1    2    2    3    3    4    4    5    5    6    6    7    7    8    MSGE
----5----0----5----0----5----0----5----0----5----0----5----0----5----0----5----0     NO      MESSAGE DESCRIPTION

01002                         2AALUT  1                  50  E    A2

01002                         2AALUT  1                  50  E    A3

01002                         2AALUT  1                 200  E    A4

01002                         2AALUT  1                  01  E    F1

01002                         2AALUT  1                  00  E    I1

01002                         2AASUT  1                  02  E    A2

01002                         2AASUT  1                  01  E    A3

01002                         2AASUT  1                  20  E    A4

01002                         2AASUT  1                  01  E    F1

01002                         2AASUT  1                  00  E    I1

01002                         2AASUT  1                  02  E    I2

01002                         2AASUT  1                  04  E    I3

01002                         2AASUT  1                  06  E    I4

01002                         2AASUT  1                  20  E    I5

01002                         2AASUT  1                  20  E    I6

01002                         2AASUT  1                 001  E    P4
```

```
SAMPLE INFORMATION SYSTEM          STATION SUPPLEMENTARY FILE UPDATE REPORT                    RUN DATE: 13 MAR 81       PAGE:   01

PROGRAM:  01      WATER MANAGEMENT
  STUDY:  002     INLAND WATER QUALITY MONITORING

                         R S---------- REASONABILITY ------*  R  U S- WATER QUALITY COMPLIANCE --*
STATION IDENTIFIER  PARM  G E                                 G  S E                                  ---------- A C T I O N -----------
                          E A   MINIMUM         MAXIMUM       E  E A   MINIMUM          MAXIMUM

                    ALOT                                      1 A2                    <    5.000      ADDED
                    ALOT                                      1 A3                    <    5.000      ADDED
                    ALOT                                      1 A4                    <   20.000      ADDED
                    ALOT                                      1 F1                    <    0.100      ADDED
                    ALOT                                      1 I1                    <    0.000      ADDED
                    ASOT                                      1 A2                    <    0.200      ADDED
                    ASOT                                      1 A3                    <    0.100      ADDED
                    ASOT                                      1 A4                    <    2.000      ADDED
                    ASOT                                      1 F1                    <    0.100      ADDED
                    ASOT                                      1 I1                    <    0.000      ADDED
                    ASOT                                      1 I2                    <    0.200      ADDED
                    ASOT                                      1 I3                    <    0.400      ADDED
                    ASOT                                      1 I4                    <    0.600      ADDED
                    ASOT                                      1 I5                    <    2.000      ADDED
                    ASOT                                      1 I6                    <    2.000      ADDED
                    ASOT                                      1 P4                    <    0.010      ADDED
                    BAOT                                      1 F1                    <    0.500      ADDED
                    BAOT                                      1 I1                    <    0.000      ADDED
                    BAOT                                      1 P4                    <    1.000      ADDED
                    BBOT                                      1 A2                    <    5.000      ADDED
                    BBOT                                      1 A3                    <    0.750      ADDED
                    BBOT                                      1 A4                    <    2.000      ADDED
                    BBOT                                      1 I1                    <    0.000      ADDED
                    BOD5                                      1 I1                    <    0.000      ADDED
                    .
```

```
SAMPLE INFORMATION SYSTEM          STATION SUPPLEMENTARY FILE LISTING                      RUN DATE:  13 MAR 81       PAGE:    01

PROGRAM:  01     WATER MANAGEMENT
  STUDY:  W02    INLAND WATER QUALITY MONITORING

                                                                                                                LEVEL = 2

STUDY
                                                      R-S--------- RESULT RANGE --------  R--U-S-- WATER QUALITY COMPLIANCE --
                                              LAST    G E                                 G  S E
                                      PARM    UPDATE  E A   MINIMUM          MAXIMUM      E  E A   MINIMUM            MAXIMUM

                                      ALOT   81/03/13                                     1 A2                   <      5.000

                                                                                          1 A3                   <      5.000

                                                                                          1 A4                   <     20.000

                                                                                          1 F1                   <      0.100

                                                                                          1 I1                   <      0.000


                                      ASOT   81/03/13                                     1 A2                   <      0.200

                                                                                          1 A3                   <      0.100

                                                                                          1 A4                   <      2.000

                                                                                          1 F1                   <      0.100

                                                                                          1 I1                   <      0.000

                                                                                          1 I2                   <      0.200

                                                                                          1 I3                   <      0.400

                                                                                          1 I4                   <      0.600

                                                                                          1 I5                   <      2.000

                                                                                          1 I6                   <      2.000

                                                                                          1 P4                   <      0.010


                                      BAOT   81/03/13                                     1 F1                   <      0.500

                                                                                          1 I1                   <      0.000

                                                                                          1 P4                   <      1.000


                                      BBOT   81/03/13                                     1 A2                   <      5.000
```

GENERAL

Due to the volume of samples collected in some programs, the SIS uses a three tier SRM master file. Each program/ study has its own SRM master file and can use one or all three tiers.

The first tier is referred to as the "current" sampling year file. It is used to store the samples analyzed in the current sampling year (January to December). All LIS data transferred to the SIS is placed on this file. It is the responsibility of the user to ensure that corrections or modifications are carried out on this file before the end of February of this following year. At this time, all samples records for the previous year are removed from the current master file and merged with the second tier historical file. The historical file would contain sample data for the past 10 - 15 years. The volume of data and frequency of data retrievals would determine the time period of storage. Sample data which is no longer required to be kept on the historical file would be transferred to the third tier "archive" file. This data transfer would be carried out every 2 - 5 years.

SRM UPDATING FROM LIS

When the sample has been analyzed, the laboratory sends an analysis report to the appropriate person(s). Usually weekly, a computer tape is produced at the main laboratory with all the field data and analysis at this point. The tape is then used to update the SIS SRM file. There are two types of records on this file -

1) interim

2) final

An interim record has the same format as a final record except that all analyses for a sample have not been completed at the time of data transfer to the SIS. The following week this same interim record could be transferred as a final record if all the analyses are then completed.

Once the data is received at the computer centre, the update of the sample results file takes place. The update generates a listing for:

1) Interim records added or replaced

2) Final (completed) records added

3) Analysis results which were outside specified limits as defined by the user on the SSF file

4) List of LIS Submission Numbers in Update

5) SRM Turnaround Update Form

   This report is produced only for those LIS records which were rejected and had a status of FINAL "F". The User may then make corrections to the appropriate fields on the report by writting over top of the pre-printed values and submitting the form for keypunching. Rules for Batching and Submission of the forms are the same as for the "SRM MAINTENANCE" procedure. Please note that decimal places are not shown on this form, and users coding data fields must leave them out. ZERO FILL ALL FIELDS.

6) control summary report

Detailed error messages will be printed on the appropriate reports. When the update is completed, the reports are sent by the Systems Operations Section to the co-ordinator for the specific program/

study.

The following explains the LIS/SIS update processing:

The initial LIS sample record passed to the SIS will create a new sample record where there is no record with the same sequence key.

Where a sample record exsists in the SIS because of either a previously LIS/SIS update or by the user adding the record thru the SIS SRM Update procedure or Bench Update procedure, the SRM fields will be modified as follows:

- LIS fields such as sampling agency, field page data (data not stored in SIS as tests), and descriptions will be replaced in each LIS/SIS update;
- the LIS sample record will update those "field data" fields which are located in the fixed portion of the SRM record only if the fields do not contain values - this will permit the user to modify the record without fear that the LIS will replace the changed values: examples of these fields are - project, sub-project, water depth, water layer, bearing from reference, sample type data;
- LIS entered field data which are stored in the SIS as tests will be replaced and/or added in each LIS/SIS update - these are not to be modified by the user until the record has a status of "final" (i.e. - field ph, water temperature, air temperature, field turbity etc.);
- LIS analytical tests will be replaced and/or added in each LIS/SIS update - these are not to be modified by the user until the record has a status of "final";
- user may submit SRM Update forms to add or change tests which are not passed to the SIS by LIS (i.e. - regional lab tests)

PLEASE NOTE THAT CORRECTIONS ARE NOT BE MADE TO INTERIM RECORDS - ONLY FINAL (completed).

SRM MAINTENANCE

An important feature available to the user of the SIS system is the ability to modify data already stored on the SRM master file. The process of changing the master file is initiated by completing the SRM update change form described in this section. Virtually any data field may be changed or deleted. It is not necessary to pad fields with zeros unless specified otherwise. Changes are not to be made to interim records as they will be erased when the record is replaced by a final (complete) record (data entered at lab will modifiy record).

Users are not permitted to modify the sequence key of the SRM record thru the Update procedure until the record has a status of "final". The SRM sequence key affected are:

- Station id
- Sample Date
- Sample Time
- Distance From Shore
- Sample Depth
- SIS Sample Type
- Sample Number

The change form can be logically split into three parts:

1) sample identification
2) card types "A", "G", "I", "J", "R", and "T" which change the fixed data portion of a sample record
3) card type "P", which changes the master record answer bucket areas (test name).

Card type "J" and "T" are used to change the identification of a sample which was originally entered incorrectly. The cards on one change form make up a set (additional forms may be required if more than 10 tests are to be changed). Only one type "A", "G", "I", "J","R" or "T" card may be present for a set. Up to 300 type "P" cards may be present.

In any one update run, a maximum of 300 sets may be added (300 sample records) to the file along with a maximum of 900 sets (900 sample records) which can change (including deletes) master records.

The computer program compares the sample identification fields (line 1 on the form - program/study, station ID, sample date and sample number) to the corresponding field on the master file, and when a match is achieved, the program either adds, changes or deletes sample data from the file. Once all changes have been applied, the SRM record is then edited for errors. Any errors that occur will be listed on a error report. There is a "short" and "long" version of this report. The difference between them is that the long version gives a total sample record dump of the data added, changed, or deleted for a record; while the short version will give a total dump of a record only if the record is deleted. The long version is the standard report format for all program/ studies. A user may have this report format changed to the short version by contacting the Systems Development Section.

Right justify numeric data or align on the decimal point (where shown). Values to the right of the decimal place on all card types are to be zero filled. The result value field on the "P" card must reflect the actual test value (no zero filling).

The report formats are the same as those for the LIS - SIS update. It is the responsibility of the user to check all output listings for error messages and take appropriate action.

The user may also use the SIS TSO procedure described in the chapter: DATA RETRIEVAL to create SRM transactions via a 3270 terminal. The transactions are placed in a disk data set for subsequent updating of the SRM file by the Systems Operations Section.

Completing The Sample Identification Fields

The purpose in filling out these fields is to identify a sample record to be added, changed, or deleted.

Program/Study

Valid codes are shown on the CDF Listing

Station ID

There is a maximum of 20 characters on the SRM master file for a station ID number. This field on the change form is pre-printed according to the station ID format for a specific program/ study. Zero filling is not necessary.

If the General Format change form is used - 20 characters pre-printed for the station ID, the value is to be entered left justified.

Sample Date

This is the date on which the sample was collected or taken.

Sample Number (Field Sample Number)

Enter the sample number right justified (even if value is alphabetic) exactly as was coded on the LIS Request For Analysis Form.

For Observation Wells Levels, this field is to contain zeros.

Adding A New Record

1) fill in the sample identification field as described on the previous page

2) enter an "A" in column 40 of line 2

3) enter correct values in the "file sequence " fields (columns 41-58 on line 2). A zero value is permissable for Distance From Shore and Sample Depth. The Sample Time Zone field is to remain blank.

   Valid Sample type codes are found on the CDF Listing

   The following fields found on line 2 will have zero stored on the SRM if left blank:

   Water depth (column 66-70)

   Water layer (column 71)

   Bearing From Ref (column 72-74)

   The Lis sample type, LIS approval and Status fields are to remain blank.

4) fill in any of the fields for an "G" or "I" type transaction that differ from the default options below. If the field is left blank, the default value will be stored on the SRM master.

   Sampling Agency '01________' columns 45-54

   Analysis Agency '01________' columns 55-64

   Samplers Surname - default spaces columns 51-70

5) fill in appropriate fields on "J" type transactions (on the back of form) depending on the sample type code entered on line 1. All entries are numeric.

   Composite: Time or Depth Sample

   Sample Time

   not used at present.

   No. Of Samples

enter number of samples taken for composite time or depth period.

Time Interval

if sample type coded on line 2 is a Time composite, this field is to be coded.

Depth Interval

if sample type coded on line 2 is a Depth composite, this field is to be coded.

Precipitation Sample and Low Volume Sample

Initial Date

this is the date on which the sampler was set up. The "sample date" on line 1 is the date that the sample was removed for analysis.

Initial Time

same as initial Date - fill in other fields as required.

Sediment Sample

From Depth (cm) - enter the appropriate value (greater than 0)

To Depth (cm) - enter the appropriate value (greater than 0)

6) DO NOT complete a "R" type transaction

7) Complete a "P" type transaction for each sample result. If an additional input form is required, be sure to complete line 1. A maximum of 300 "P" type transactions can be coded for one sample "set".

Test Code (Parameter)

Mandatory Field. A list of test names is contained on the CDF File Listing. Value is to be entered left-justified.

Analysis Method

Is mandatory when two or more tests with the same test name are present for the same sample.

Unit Of Measure

Mandatory field when adding a new test to a record, otherwise leave blank unless the field is to be changed (test already exists on the record)

Remark

Value is numeric and is to be zero filled when coded. Valid values are listed on the CDF Listing - NOTE: this is not the LIS remark, but a numeric substitute

Alpha

If an alphanumeric “result value” is to be stored, enter an “A” otherwise, leave blank - When coding an alphanumeric value, only the left most 6 characters (columns 64-69) are to be used

Decimal

Leave Blank

Result Value

If a negative result value is to be stored, enter a “-” in Column 64

Enter the numeric value in columns 65-71 aligning on the decimal - No zero filling is necessary

If the result value is greater than 9999.999 or less than 0.999, enter the exponent value

Exponent =	“+05”	- multiply result by	100,000
	“+04”	- “	10,000
	“+03”	- “	1,000
	“+02”	- “	100
	“+01”	- “	10
	“-01”	- divide result by	10
	“-02”	- “	100
	“-03”	- “	1,000
	“-04”	- “	10,000
	“-05”	- “	100,000

Changing An Existing Record

NOTE: To reset a field on the SRM master file to zeros or spaces place all "*" in the appropriate field on the update form.

1) fill in the sample identification field

2) if any of the fields on line 2 are to be changed, insert a "C" in the transaction field - column 40: otherwise leave the transaction field blank

3) for "G" transaction types, enter corrected values: otherwise leave fields blank

4) if changes are required on the "J" type transaction, code only those sub-fields required. The format of the "J" card depends on the sample type code defined for the record

5) For Test data:

to add new tests:

see section on adding a new record - item 7

to change fields for a given test which already exists on the SRM file

code only the test code and the required sub-fields which are to be modified

to delete a test

code the test name (and analytical method if duplicate tests exist for the same sample record) and enter "DEL" in the remark field

Deleting An Existing Record

1) fill in the sample identification field

2) insert a "D" in column 40 of line 2. LEAVE ALL OTHER FIELDS BLANK

Re-assigning a New Station ID, Sample Date or Sample No

Users are not permitted to modify the sequence key of the SRM record thru the Update procedure until the record has a status of "final".

1) Specific Sample Change ("R" Card)

   Code the appropriate information on the "R" type card. Only those fields to be re-assigned need be coded.

   Other fields on the form may also be modified according to the instructions for a "change". Do not code the transaction field on line 2 - column 40, if there is no data entered on this line.

2) Global Change ("T" Card)

   This function permits the user to correct the station id for several records on the SRM file with only one transaction record being coded. Only the Station Id and Sample Date fields are used for this function. No other data is allowed to be coded for the records which will be modified by this function.

   To use this function, code the appropriate replacement station id and/or sample date on the "R" card. Replace the "R" by a "T".

   The following action will occur:

   a) If line 1 contains both a station id value and sample date value, all SRM records found to have the ID and sample date specified will be changed the the replacement values.

   b) If line 1 contains only a station id value, all SRM records found to have the specified ID will be changed to the replacement value.

   THE USER HAS THE RESPONSIBILITY TO ENSURE THAT WHEN THE GLOBAL FUNCTION IS USED, ONLY THOSE RECORDS REQUIRED ARE MODIFIED AND THAT DUPLICATE SEQUENCE KEYS ARE NOT CREATED. AS MENTIONED PREVIOUSLY, NO OTHER CHANGES ARE ALLOWED TO THE SPECIFIC RECORDS TO WHICH THE GLOBAL CHANGE FUNCTION WILL APPLY WITHIN THE SAME UPDATE RUN.

SRM Turnaround Update Form

This report is produced only for those LIS records which were rejected and had a status of FINAL "F". The format of the report is that of the SRM Update Form which permits the data to be keypunched.

The User may make corrections to the appropriate fields on the report by writting over top of the pre-printed values and submitting the forms for keypunching. Rules for Batching and Submission of the forms are the same as for the "SRM MAINTAINANCE" procedure. Please note that decimal places are not shown on this form, and users coding data fields must leave them out. ZERO FILL ALL FIELDS.

Creating SRM Transactions Via 3270 Terminal

Users which have access to a 3270 type terminal may input additions or changes at their terminal. Systems Operations will then use these transactions created by the user to update the SRM file. Refer to the Section SIS PROCESSING - SUPPORT OPTION in the DATA RETRIEVAL Segment of this Manual.

BATCHING AND SUBMISSION OF SRM UPDATE FORMS

1) All coded documents must be batched by program/ study and sampling year prior to being sent to the Systems Operations Section for processing. This permits Systems to apply the modifications to to the appropriate Current, Historical or Archive Master File.

   In any one run, a maximum of 300 transaction sets (individual sample records) may be added to the file along with a maximum of 900 transaction sets which can change (including deletes and re-assign) records.

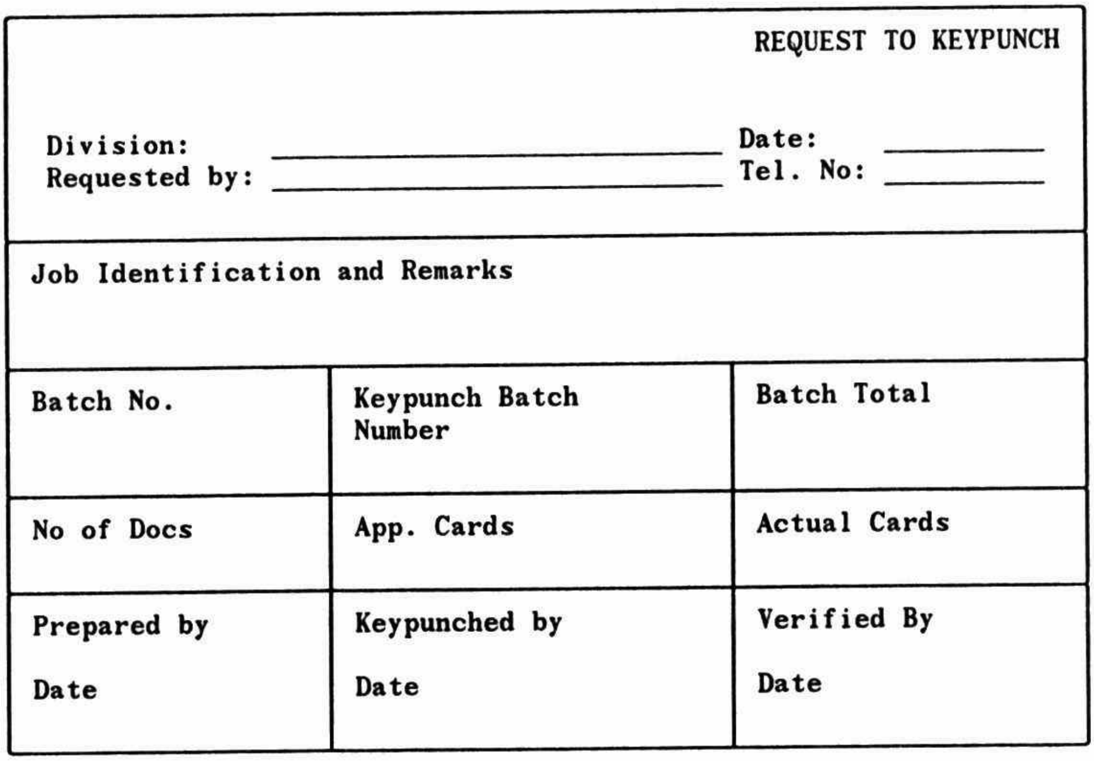
2) fill in a “Request TO Keypunch” form (obtainable from the Systems Section) for the following items and attached it to the first sheet in the batch:

   - date
   - number of sheets in batch (MAXIMUM OF 50 IN ANY ONE BATCH)
   - estimated cards to be keypunched
   - program/study code and description (in description part of form)
   - prepared by

3) Computer updates will be carried out upon demand.

   As the updates cost considerable money, users should not submit the update forms for processing until at least 25 records are to be processed.

EXAMPLE OF THE REQUEST TO KEYPUNCH FORM



REQUEST TO KEYPUNCH

Division: ______________________ Date: __________
Requested by: ______________________ Tel. No: __________

Job Identification and Remarks

Batch No.	Keypunch Batch Number	Batch Total
No of Docs	App. Cards	Actual Cards
Prepared by Date	Keypunched by Date	Verified By Date

OUTPUT REPORT AND ERROR CORRECTION PROCEDURE

The SRM update program produces the following reports:

1) Transaction Error Report

2) Laboratory Error Report

3) Completed Sample Records Added To File

4) Interim Sample Records Added To File

5) LIS Submission Numbers In Update

6) SRM Turnaround Form

7) Result Range Violation Report

8) Control Summary Report

Depending on the program/ study code, the reports may be printed in sequence by sampling organization code.

All reports produced in any one update are to be checked page by page by the user to ensure that the appropriate action was taken. It is the responsibility of the user to correct any errors listed and re-submit them.

Output reports returned to the user are to be dated and kept on file (in sequence) for a period of 4 months. If problems arise in the update procedure, the Systems Development staff will require these listings to enable them to take corrective action.

Ministry
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Ontario

Sample Information System
S R M File (GENERAL)

PGM	STUDY	STATION IDENTIFIER	SAMPLE DATE YY	MM	DD	SAMPLE NUMBER
1	5	6 15 25	26		31	32 39

FILE SEQUENCE

40	DISTANCE FROM SHORE	SAMPLE TIME ZN	HR	MN	SAMPLE DEPTH	SAMPLE TYPE	LIS SAMPLE TYPE	LIS APPROVAL	WATER DEPTH	WATER LAYER	BEARING FROM REF	RECORD STATUS
A,C orD	41 45	46		50	51 . 55	56 58	59	61 65	66 . 70	71	72	75

	PROJECT	SUB PROJECT	SAMPLING AGENCY MIN	DIV	BR	SEC	UNIT	ANALYSIS AGENCY MIN	DIV	BR	SEC	UNIT
G	41	43	45				54	55				64

	REGION	DISTRICT	MUNIC CODE	SAMPLERS SURNAME
I	41	43	46 50	51 60 70

	REPLACEMENT STATION ID	REPLACEMENT SAMPLE DATE YY	MM	DD	REPLACEMENT SAMPLE NUMBER
R	41 50 60	61		66	67 74

40	PARAMETER GRP 41	TEST 46	ANALYSIS METHOD 47 52	UNIT OF MEASURE UNIT 53	SCALE 56	REMARK 59	ALPH 62	DEC 63	RESULT – 64	VALUE 68	EXPONENT ± 72 75
P										.	E
P										.	E
P										.	E
P										.	E
P										.	E
P										.	E
P										.	E
P										.	E
P										.	E
P										.	E

1673 (G), p. 1

```
SAMPLE INFORMATION SYSTEM             C O N T R O L   S U M M A R Y          RUN DATE:  6 MAR 81      PAGE:   02

 PROGRAM : 01      WATER MANAGEMENT


 I N P U T -

      TRANSACTION CARDS READ                  92

      LABORATORY RECORDS READ:                 0

      MASTER RECORDS READ:                     0

 O U T P U T -

      MASTER RECORDS WRITTEN:                  7

      NO OF INTERIM SAMPLE RESULTS:            0

      NO OF FINAL SAMPLE RESULTS:              7

 U P D A T E   I N F O R M A T I O N -

      RECORDS ADDED TO MASTER:                 7

      RECORDS REPLACED ON MASTER:              0

      RECORDS CHANGED ON MASTER:               0

      RECORDS PURGED FROM MASTER:              0

      LABORATORY INPUT ERRORS:                 0

      LABORATORY RECORDS BYPASSED:             0

      TRANSACTION RECORDS IN ERROR:            3

      TRANSACTION RECORDS ACCEPTED:            7


            DATABASE FILE NAME:               WATER MGMT    - SURFACE WATER

                   COORDINATOR:
                         PHONE:
                        BRANCH:
                       ADDRESS:
```

```
SAMPLE INFORMATION SYSTEM              COMPLETED  SAMPLE  RECORDS  ADDED  TO  MASTER             RUN DATE:   6 MAR 81        PAGE:     02

 PROGRAM : 01       WATER MANAGEMENT

   STUDY : 003     SURFACE WATER                                                                  (ADDED TRANS RECORD)

  STATION ID CODES            SAMPLE   DIST    -SAMPLE TIME-  SAMPLE  SAMPLE  SAMPLE    COMPUTER   SAMPLING AGENCY        ANALYSIS AGENCY
                               DATE    SHORE   ZONE:HOUR-MIN  DEPTH    TYPE     NO        ENTRY  MIN:DIV:BR:SEC:UNIT  MIN:DIV:BR:SEC:UNIT

03-0077-530-01               78/02/04  00000     5   10  15   000,03    012  00000012  81/03/06  01                     01


WATER  WATER  BEARING      ------L O C A T I O N   C O D E S---- TIME -----C O M P O S I T E   S A M P L E-----
LAYER  DEPTH   POINT        REGION:DIST:ELECTORAL:MUNICIPALITY   PREC HR:MIN:NO SAMPLES:TIME INTER:DEPTH INTER

  0   000,00   000            02                                   0   00  00     01       00:00      006,00


APPROVAL    --SAMPLERS SURNAME--      SAMPLE  PROJ   SUB    -NO OF-
 -LAB-                                STATUS  CODE   PROJ   RESULTS

                                        F                     06


TEST   ANAL    UNIT     REM A D    RESULT       TEST   ANAL    UNIT     REM A D    RESULT       TEST   ANAL    UNIT     REM A D    RESULT
NAME   METHOD    SCALE    L C    VALUE        NAME   METHOD    SCALE    L C    VALUE        NAME   METHOD    SCALE    L C    VALUE

CAUT           063      31 N 2    73,01 E+02 CR3FR          064          N 2     0,03       PBORXT          059      32 N 2 1631,79
CCINFR         000         N 3   113,167     FFIDUT         061          N 3     1,025      PPF1            064      33 N 0  155,

                  *** THE ABOVE RECORD HAS BEEN POSTED TO THE MASTER FILE WITH THE FOLLOWING WARNING CONDITIONS:-

                  SR0090   COMPOSITE NO, OF SAMPLES ' 1' IS INVALID OR MISSING
                  ST0480   REMARK CODE '086' NOT VALID FOR TEST NAME 'FWBTHS', 000 INSERTED
                  SR0490   BUCKET FOR TEST NAME 'FWBTHS' DELETED, ANALY, REQUEST DELETED BY SUBMITTOR
                  SR0415   UNIT CODE '059' NOT DEFINED ON CDF FOR TEST NAME 'PBORXT'
```

```
SAMPLE INFORMATION SYSTEM              TRANSACTION ERROR REPORT - EDIT/UPDATE                  RUN DATE: 6 MAR 81        PAGE: 01
 PROGRAM :

                           C A R D   I M A G E   A N D   M E S S A G E S
         1    1    2    2    3    3    4    4    5    5    6    6    7    7    8 INPUT
----5----0----5----0----5----0----5----0----5----0----5----0----5----0----5----0 SEQUENCE


0100303007750001         78020400000010A     5101500003011                F        0001
0100303007750001         78020400000010I02   56030                                 0002
0100303007750001         78020400000010PBAUT   AAA2 064    34   23443  E           0004
0100303007750001         78020400000010PBAUT   AAA1 064    34     87    E          0003
0100303007750001         78020400000010PBBFTXX      090          138   E+10        0005
0100303007750001         78020400000010PCAUT        006             630E           0006
0100303007750001         78020400000010PCCHLAB      000    38  -016301 E+01        0007
0100303007750001         78020400000010PCCINFT      064          773   E           0008
0100303007750001         78020400000010PCCORFR      0A3         2C113 E            0009
0100303007750001         78020400000010PCCO2UR      061    72         6 E          0010
0100303007750001         78020400000010PCDFR        064          7302 E            0011
0100303007750001         78020400000010PCEFB        063         16290 E            0012
0100303007750001         78020400000010PCLCOUR      000      A RED     E           0013
0100303007750001         78020400000010PCLIDFR      073805         72035E          0014
0100303007750001         78020400000010PFFIDUT      073   983     17   E           0015
0100303007750001         78020400000010PHGUT        067810 40    5432  E           0016
0100303007750001         78020400000010PHGUT   AAA2 067810 40   16101 E            0017

                    *** THE ABOVE TRANSACTION SET WAS PROCESSED WITH THE FOLLOWING ERRORS:-
                    SR0900   TEST NAME CODE BBFTXX NOT ON CDF - CARD REJECTED
                    SR0900   TEST NAME CODE CCHLAB NOT ON CDF - CARD REJECTED
                    SR0900   TEST NAME CODE CCORFR NOT ON CDF - CARD REJECTED
                    SR0900   TEST NAME CODE CDFR   NOT ON CDF - CARD REJECTED
                    SR0900   TEST NAME CODE CEFB   NOT ON CDF - CARD REJECTED
                    SR0900   TEST NAME CODE CLCOUR NOT ON CDF - CARD REJECTED


0100303007750001         78020400000012A     5101500003012                F        0018
0100303007750001         78020400000012I02                                         0019
0100303007750001         78020400000012J     1      600                            0020
0100303007750001         78020400000012PCAFT         66    32     15217E+0A        0021
0100303007750001         78020400000012PCAUT         63    31     7301 E+02        0023
0100303007750001         78020400000012PCCHLA        68            101 E           0024
0100303007750001         78020400000012PCCINFR      000          113167E           0022
0100303007750001         78020400000012PCR3FR        64              03 E          0025
0100303007750001         78020400000012PFFIDUT       61             1025E          0026
0100303007750001         78020400000012PFWBTHS       64    86     16111E           0030
0100303007750001         78020400000012PHALSU        61    83          E           0029
0100303007750001         78020400000012PPBORXT       59    32  X163179 E           0027
0100303007750001         78020400000012PPPFT         64    33    155   E           0028

                    *** THE ABOVE TRANSACTION SET WAS PROCESSED WITH THE FOLLOWING ERRORS:-
                    SR0900   TEST NAME CODE CAFT   NOT ON CDF - CARD REJECTED
                    SR0900   TEST NAME CODE CCHLA  NOT ON CDF - CARD REJECTED
                    SR0900   TEST NAME CODE HALSU  NOT ON CDF - CARD REJECTED
0100303007750001         78030100000013A000305093000600011       000301065         0031
```

DATA RETRIEVAL

TABLE OF CONTENTS

CONSIDERATIONS 350-10-1
  GENERAL 350-10-1
  DATASET NAMES 350-10-1
  TSO TERMINALS 350-10-2
  TSO TASK STRUCTURE 350-10-2
  HOW THE RETRIEVAL SYSTEM WORKS 350-10-5
  DISPLAY FORMATS 350-10-8

SIS PROCESSING 350-20-1
  INVOCATION AND TERMINATION 350-20-1
    BROWSE OPTION 350-20-5
    EDIT OPTION 350-20-7
    UTILITIES OPTION 350-20-10
    VERIFY OPTION 350-20-11
    LIST OPTION 350-20-12
    RETRIEVAL OPTION 350-20-15
    SUPPORT OPTION 350-20-17
      Creating SDF File Changes Via 3270 Terminal 350-20-17
      Creating SRM File Changes Via 3270 Terminal 350-20-23
    TUTORIAL OPTION 350-20-28
  SPECIAL PROCESSING FOR NON-3270 TYPE TERMINALS 350-25-1
    GENERAL 350-25-1
    DATASET NAMES 350-25-3
    UTILITY FUNCTIONS 350-25-4

RETRIEVAL CONTROL STATEMENTS 350-30-1
    PROGRAM Keyword 350-30-5
    DATE Keyword 350-30-6
    STATION Keyword 350-30-7
    OPTION Keyword 350-30-9
    TEST Keyword 350-30-11
    HEADING Keyword 350-30-15
    TITLE Keyword 350-30-16
    DEPTH Keyword 350-30-17
    SAMPLE Keyword 350-30-20
    LISTYPE Keyword 350-30-21
    REGION Keyword 350-30-22
    CRITERIA Keyword 350-30-23
    SEASON Keyword 350-30-24
    UTM Keyword 350-30-26
    FIELD075 Keyword 350-30-27
    AGENCY Keyword 350-30-29
    DESCLOC Keyword 350-30-30
    DESCSAMP Keyword 350-30-30
    NOSAMP Keyword 350-30-30

IDENTIFYING SUCCESSFUL REQUESTS 350-40-1

DATA RETRIEVAL

TABLE OF CONTENTS

GENERAL

The SIS Retrieval System is set up to run in a background (batch) mode. To retrieve data from the system, a TSO procedure was developed to allow the User to interface with the system.

Before using the SIS TSO procedure, the user must have followed the steps as outlined in the System Description describing USERID and file access.

In addition, the user is to create a dataset which is to contain the retrieval selection criteria as described in the Section RETRIEVAL CONTROL STATEMENTS. These statements may then be modified as required by the User to do different retrievals.

This dataset can be a sequential or partitioned dataset. The characteristics of the dataset must be as follows:

- record format (RECFM) = fixed blocked (FB)
- record length (LRECL) = 80 characters
- blocksize (BLKSIZE) = 6160 characters

Each record on the dataset must be sequentially numbered in columns 73-80. This can be done thru a TSO command.

DATASET NAMES

SIS encourages standardization in the structure and naming of data files. A standard output file is a catalogued dataset with a 5-level dataset name in the form:

“prefix.section.userSIS.file name.Ddate-time

where -

PREFIX - is the prefix, assigned to each branch or region, and comprises the first 4 characters of the USERID. (i.e. ENQL - Water Resources).

SECTION - is a two letter identifer assigned by the Systems Development Section to identify a section within a branch.

USER - is the initials obtained from the userid of the person executing the SIS TSO procedure. The initials are followed by the letters "SIS".

FILE NAME - is the name of the file being created. It will usually be the same name used for the DDNAME on the DD JCL statement.

DATE - is a group of 8 characters identifying the date and time that the dataset was created. The format is the letter "D" followed by a 3 digit sequential day, followed by the time (hr-min).

An example of a dataset name created by the procedure would be

```
ENQL.HM.JCSIS.SPSS40.D2301012
```

It is the responsibility of the user to delete datasets no longer required. This includes both disk and tape datasets. To delete a dataset under TSO, you would enter the command DELETE followed by the dataset name in single quotes and then NOSCRATCH or PURGE.

```
DELETE 'ENQL.HM.JCSIS.SPSS40.D2301012' NOSCRATCH
```

TSO TERMINALS

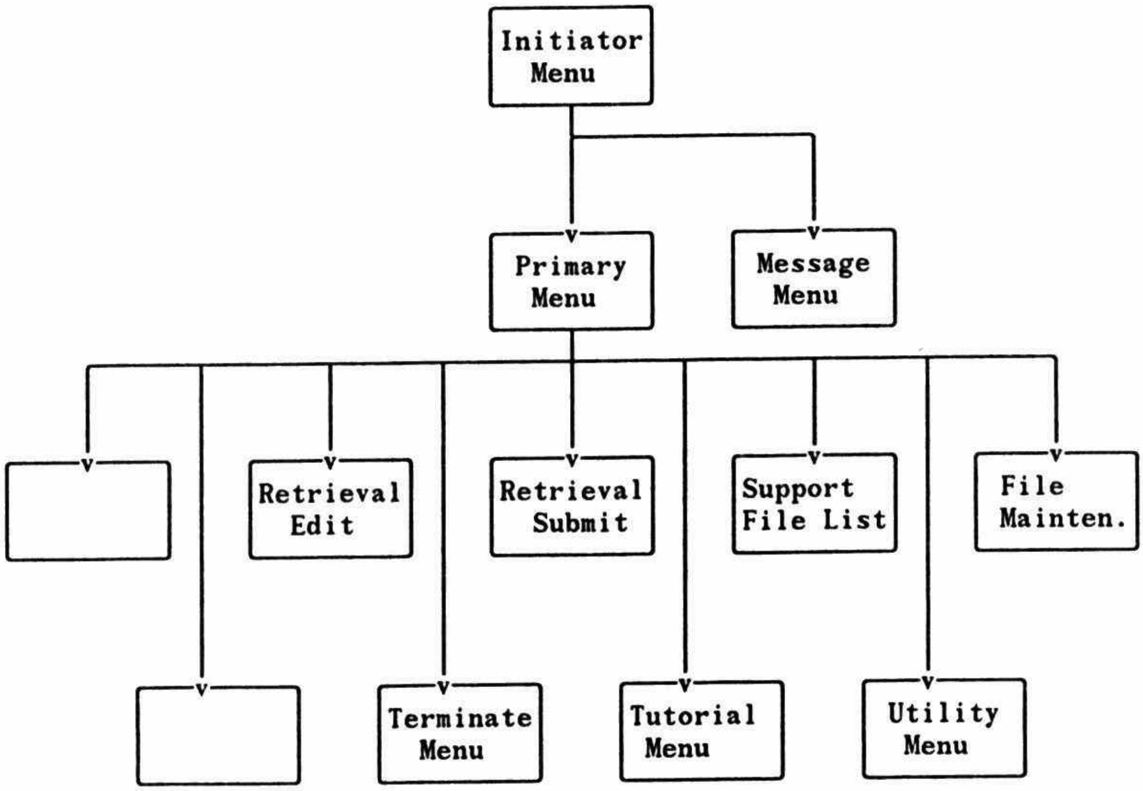
The TSO procedure to be used to access the SIS depends upon the type of TSO terminal available to the user. The section SIS PROCESSING describes the processing for a terminal which can emulate the IBM 3270 under TSO/SPF. Users who have other types of terminals will follow the basic instructions as described later although the display of data upon their terminals will be different. Because of the limitations of other terminals (line edit mode vs full screen edit mode) not all the options described are available to non-3270 terminal users.

TSO TASK STRUCTURE

The SIS task structure is shown on the following page. The SIS main program performs initialization/ termination functions and displays the primary option menu and links to one of several processing programs, depending on the option selected.

Once the user has selected a menu and has inputted the requested parameters, the processing may be terminated immediately by pressing the ATTENTION key for non-3270 terminals or the END KEY for 3270 terminals. This will return the user to the menu display for which the parameters were requested. If the RETURN KEY (program function key) is pressed 3270 terminal only) the primary option menu will be displayed.

RETRIEVAL TASK STRUCTURE



HOW THE RETRIEVAL SYSTEM WORKS

As mentioned previously, the Retrieval System resides at the Downsview Computer Centre and is accessed in a batch mode. The SIS TSO procedure provides the user with a means of interfacing with the System without having to know JCL, etc.

The System consists of many programs designed to execute specific functions. These programs can be divided into five phases which correspond to the type of processing they perform. These are as follows:

a. Control program

b. Control Card Edit Program

c. Station Description File Extract Program

d. Sample Results Master File Extract Program

e. Report and Output File Programs

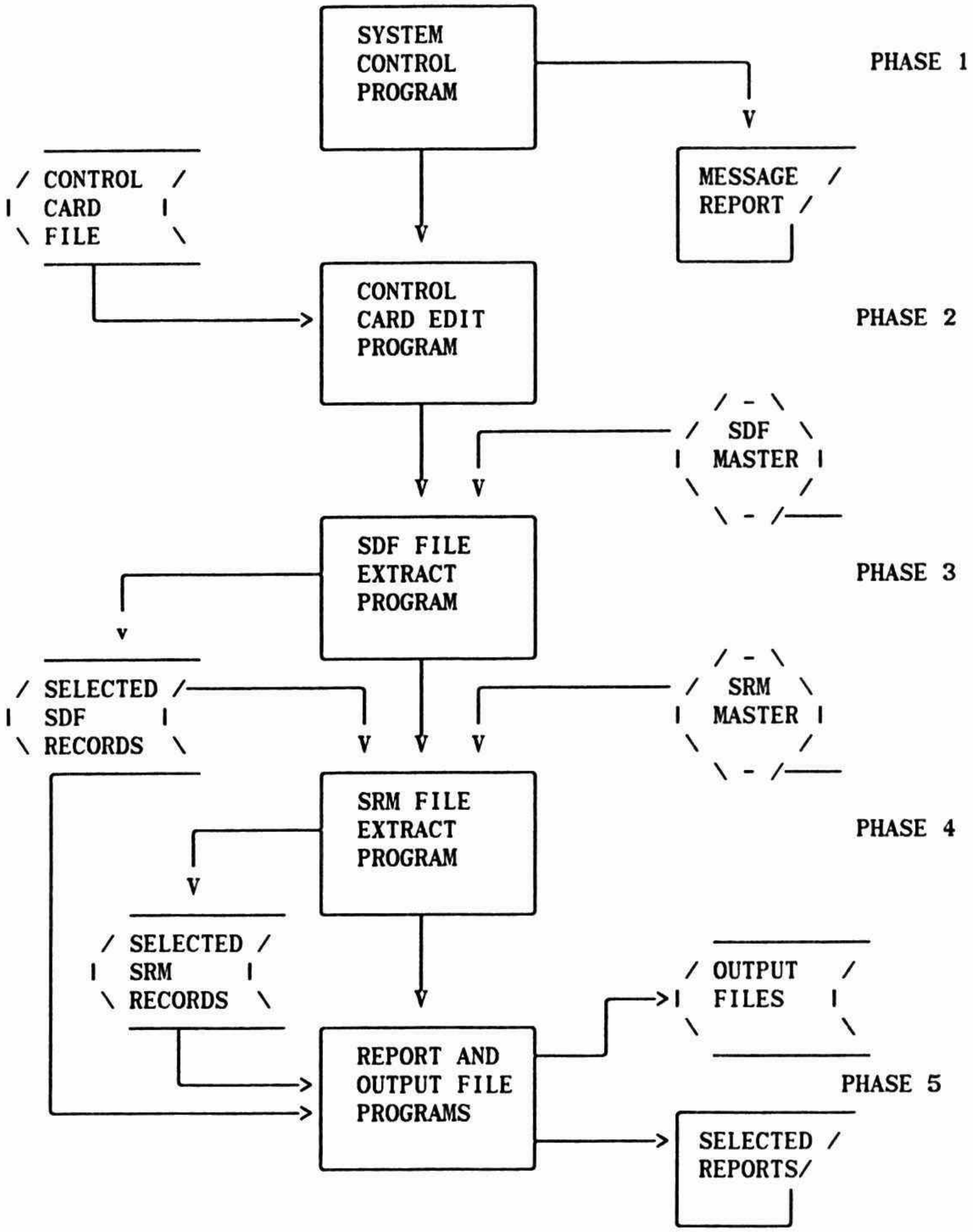
The Control program monitors all processing in the system and calls other programs as required to perform specific functions. For example, this program calls the Control Card Edit Program to read in the control card dataset containing the selection criteria specified by the User and then performs an edit on the information. Once the edit is completed, the Edit Program is exited and the Control program checks a series of switches set by the Edit program to tell it if there were any fatal errors. If so, processing is terminated and a message JOB ABNORMALLY TERMINATED is printed on the Control report.

If no serious errors were encountered in the Edit program, the next program to be called is the SDF Extract Program. This program uses the information specified by the User to select specific SDF records off of the SDF master file and writes them out onto the Selected SDF file. Information which is checked for on the SDF record are: program/ study, region/district, coordinates, station id, etc. If there are no records selected at this point, processing terminates.

The next program to be executed is the SRM Extract Program. This program reads in the Selected SDF file and compares the station id field of the SDF Selected File record to that on the SRM master file. If a match occurs, the SRM record is then checked for other criteria which the User specified such as date ranges, depth ranges, agency code etc. If all conditions are met, the program then compares the requested tests to those on each record and where a match is found, the SRM record is written onto a Selected SRM file with the requested tests. When writing out the selected tests, the program will convert the values to the requested unit of measure. If there are no records selected at this point, processing terminates. If SRM records are selected, and there are no fatal errors, processing continues to the specific Report and Output File programs. In some cases, several programs may be executed for a specific function.

The diagram on the following page illustrates the Retrieval System Selection Process.

DATA RETRIEVAL SYSTEM SELECTION PROCESS



DISPLAY FORMATS

This procedure has been developed as a retrieval aid that operates in the TSO environment and is designed to optimize batch processing. It is therefore, essential that the user selects the appropriate options when prompted and enters data in the required format.

SIS uses three basic types of display presentations.

a. OPTION SELECTION MENUS - The user selects from a list of options by typing in a number or letter and pressing the ENTER KEY.

b. PARAMETER ENTRY MENUS - The user supplies parameters by filling in labelled fields. In some cases default values will be used if no value is entered.

c. DATA DISPLAY - For displaying source data or output listings.

INVOCATION AND TERMINATION

SIS is invoked by entering the command "SIS3270" ("SIS" for non 3270 terminals). When SIS receives control, it performs initialization functions, and displays the Processing Option Panel.

This panel allows the user to specify JCL values to override system defaults for jobs to be submitted for batch processing. The ACCOUNT NUMBER field must contain a valid DCC account code (access number). The FORM NUMBER field field is to contain a value which corresponds to the forms available for printing at a specific location identified by the REMOTE PRINTER ID field. The normal default for the PRINTER ID field is RMT05 - 135 St. Clair Ave. West, 5th Floor, Systems Operations.

Enter the required information prompted for:

a. Account Number

b. JOB Class: All processing should be "O" - overnight to take advantage of the processing discount at DCC. Class options "C" or "D" are used for daytime processing.

c. Remote Printer ID: Should display default for your location. You may route your output to another location by entering one of the other values displayed. To route your output to DCC enter "ANYLOCAL".

d. Form Number: Only applies to jobs printed at 135 St. Clair West.

e. Number Of Copies: Default is 1 copy.

f. Print Class: Default value is "A". If laser ouput is required, enter a value of "C" - as well as "ANYLOCAL" for the Remote ID above.

Once the JCL options have been verified by the user and the ENTER key pressed, the PRIMARY OPTION MENU is displayed. The user selects an option by entering a one character code in the option field and pressing the ENTER KEY, i.e. -

```
SELECT OPTION ===> 2
```

to perform SPF edit on a dataset.

The SIS Primary Menu options are:

- BROWSE - TO display source data or output listings. Browse is intended primarily for viewing large datasets.
- EDIT - To create or change source data. Unlike browse, edit reads the selected member (or entire sequential dataset) into virtual storage and retains it there during edit operations.
- UTILITIES - To print, rename, or delete library members or entire datasets; allocate datasets; move or copy data; display or print catalog listings; reset SPF library statistics; initiate hardcopy output or examine held SYSOUT data.
- VERIFY ** - To perform an on-line edit of SIS retrieval control cards for syntax before submitting for batch processing.
- LIST ** - To produce file listings of the CDF, SDF, SSF, and SRM master files.
- RETRIEVAL ** - To submit retrieval JCL for background processing. The user has the option of selecting one of several procedures to be submitted depending upon the processing requirements of the retrieval.
- SRM TOTAL ** - This option allows the user to review a list which specifies the number of records on each file (i.e. master, historical or archive) as well as the specified date period stored on each file. The list is updated each week.
- SUPPORT - This option is primarily used by the Systems Operations Section to carry out maintenance functions on the master files. The option also provides the user with the opportunity to create SRM and SDF change transactions to be used to update the appropriate master files.
- TUTORIAL - To obtain immediate online instruction in the use of SIS - TSO. The tutorial may be viewed sequentially from beginning to end or randomly by selecting topics from the table of contents. The tutorial may aslo be entered from other SIS options by means of the HELP PF key.

NOTE: "**" denotes options available to non 3270 type terminals.

To terminate SIS, the user must return to the primary option menu. Once the appropriate key has been pressed, you will be asked if the JCL created during the session is to be submitted for processing. Enter YES or NO.

Upon termination of SIS, a READY message is displayed and the user is returned to normal TSO processing.

The following pages describe the primary options in detail.

```
------------------------ SIS PROCESSING OPTION PANEL ----------------
ENTER/VERIFY ALL JCL OPTIONS BELOW (BEFORE PRESSING ENTER):
                                                             USERID:
IDENTIFICATION:                                              TIME   :
          NAME: N. MADDEAUX                  PHONE: 965-6952
        BRANCH: FINANCE - ADMIN DIV.           ORG:
       SECTION: SYSTEMS DEVELOPMENT           CODE: SD

JCL DEFAULT OPTIONS:
ACCOUNT NUMBER      ===> 9999999
JOB CLASS           ===> 0      JOB CLASS OPTIONS: (FOR ALL JOBS)
                                   C OR D - DAY    O - OVERNIGHT
REMOTE-PRINTER ID   ===> RMT05  REMOTE PRINTER OPTIONS:
                                 ANYLOCAL - DOWNVIEW COMPUTING CENTRE
                                 RTM05 - ST CLAIR   RMT31 - 880 BAY
                                 RMT50 - CENTRAL    RMT51 - SOUTHWEST
                                 RMT52 - SOUTHEAST  RMT53 - WEST CENT.
                                 RMT57 - NORTHEAST  RMT58 - NORTHWEST
FORM NUMBER         ===> 801    FORM NUMBER OPTIONS:
                                 038 - ONE PART PAPER  039 - TWO PART
                                 040 - THREE PART      099 - BLANK
                                 801 - 8 1/2 BY 15
                                 899 - 8 1/2 BY 15 BLANK
NUMBER OF COPIES    ===> 01
PRINT CLASS         ===> A     OPTIONS: A-PRINT C-DCC LASER Q-HOLD
```

```
------------ SAMPLE INFORMATION SYSTEM PRIMARY OPTION MENU ----------
SELECT OPTION ===>
                                                             USERID:
                                                             TIME   :
   1  BROWSE     - DISPLAY SOURCE DATA OR LISTINGS (SPF)     TERMINAL:
   2  EDIT       - CREATE OR CHANGE REQUEST DATA   (SPF)     PF KEYS:
   3  UTILITIES  - PERFORM SPF UTILITY FUNCTIONS

   4  VERIFY     - PERFORM ON-LINE EDIT OF RETRIEVAL REQUEST
   5  LIST       - PRODUCE LISTING OF CDF, SDF, SSF AND SRM FILES
   6  RETRIEVAL  - SUBMIT SIS RETRIEVAL FOR PROCESSING
   L  SRM TOTAL  - LIST AT TERMINAL SRM DATABASE TOTALS

   U  SUPPORT    - SIS FILE MAINTENANCE
   T  TUTORIAL   - DISPLAY INFORMATION ABOUT SIS

PRESS END KEY TO TERMINATE SIS
```

BROWSE OPTION

```
---------------------------- BROWSE - ENTRY PANEL ----------------------
ENTER/VERIFY PARAMETERS BELOW:

SPF LIBRARY:
   PROJECT ===> ENSD
   LIBRARY ===> NMLIB
   TYPE    ===> CNTL
   MEMBER  ===>              (BLANK FOR MEMBER SELECTION LIST)

OTHER PARTITIONED OR SEQUENTIAL DATASET:
   DATASET NAME  ===>
   VOLUME SERIAL ===>             (IF NOT CATALOGED)

DATASET PASSWORD ===>             (IF PASSWORD PROTECTED)
```

The browse option allows the user to display source data and listings stored in SPF libraries or other partitioned or sequential data sets with the following characteristics:

Record Format (RECFM)

- Fixed, variable (non-spanned), or undefined)
- Blocked or unblocked
- With or without printer control characters

When browse is selected, an entry panel is displayed to allow the user to specify an SPF library or other data set, volume serial (if the data set is not catalogued) and data set password (if the data set is protected).

For SPF libraries and other partitioned data sets, the user can supply the name of a member to be browsed, or leave the member name blank to request a member list from which a member may be selected.

Two lines are reserved at the top of the screen for title information, short messages, command entry, and scroll amount. The remainder of the screen contains the data.

During browse,, four-way scrolling is available via the Scroll PF keys. The FIND and LOCATE commands may also be used to scroll to a particular character string, line number, or symbolic label.

Browse provides the following commands, which may be entered in the command input field on line 2:

LOCATE - Scroll to the specified line number or label.

xxxxx - Establish a label (xxxxx) for the locate command

COLS - Display a column identificaion line.

RESET - Remove column identification line.

FIND - Find a specified character string.

CAPS - Set CAPS mode on or off (affects find command strings).

HEX - Display data in hexadecimal format.

EDIT OPTION

```
----------------------------- EDIT - ENTRY PANEL ----------------------------
ENTER/VERIFY PARAMETERS BELOW:

SPF LIBRARY:
   PROJECT ===> ENSD
   LIBRARY ===> NMLIB      ===>            ===>            ===>
   TYPE    ===> CNTL
   MEMBER  ===>            (BLANK FOR MEMBER SELECTION LIST)

OTHER PARTITIONED OR SEQUENTIAL DATASET:
   DATASET NAME  ===>
   VOLUME SERIAL ===>         (IF NOT CATALOGED)

DATASET PASSWORD ===>         (IF PASSWORD PROTECTED)

PROFILE NAME     ===>         (BLANK DEFAULTS TO DATASET TYPE)
```

The edit option allows the user to create, display, and modify source data (program code, test data, documentation, etc.) stored in SPF libraries or other partitioned or sequential data sets with the following characteristics:

Record Format (RECFM)

- Fixed, variable (non-spanned)
- Blocked or unblocked
- With or without printer control characters

Logical Record Length (LRECL)

- From 10 to 255, inclusive, for fixed length records
- From 14 to 259, inclusive, for variable length records

For edit, a concatenated sequence of SPF libraries may be specified. The concatenation applies to the fetching of members to be edited. The libraries are searched in the designated order to find the member and bring it into working storage. When the edited member is saved, it is placed (or replaced) in the first library in the concatenation sequence regardless of which library it came from.

Space for the selected data set must have been previously allocated, but it may be empty. Selection of an empty sequential data set or a nonexistent member of a partitioned data set allows creation of new source data.

The selected member or sequential data set is read into virtual storage, wherein it is updated during edit operations. Use of virtual storage for edit work space results in high performance, but may require a large user region.

The edit data display is similar to a browse display except that each line consists of a 6-column line number field followed by a 72-column data field. The line number field reflects the contents of the sequence numbers in the data, if the data is numbered. For unnumbered data, the line numbers start at 1 and are incremented by 1.

Under edit, four-way scrolling is available via the Scroll PF keys. The FIND and LOCATE commands may also be used to scroll to a particular character string or line number.

To modify one or more lines of data, the user simply moves the cursor to the desired location and enters the new information by overtyping the existing lines. Several lines may be modified before pressing the ENTER key.

Lines may be deleted, inserted, shifted left or right (for indentation changes), duplicated, or rearranged by overtyping the line number fields with "line commands" consisting of one or more characters. Frequently used line commands include:

I - Insert new line

D - Delete line

R - Repeat (duplicate) line

C - Copy line

M - Move line

A - Specify destination of copy or move (insert after)

B - Specify destination of copy or move (insert before)

(- Shift left

) - Shift line right

Single character line commands operate on individual lines (e.g., D to delete a line). Double character line commands operate on blocks of lines (e.g., DD on two different lines to indicate the first and last lines to be deleted). In most cases, a number may follow the line command to indicate multiple occurences (e.g., I3 to insert three lines). Several line commands as well as data modifications may be typed before pressing the ENTER key.

For general edit operations, "primary commands" may be entered in the command input field on line 2. Frequently used primary commands include:

LOCATE - Scroll to the specified line number

RENUM - Renumber all lines

UNNUM - Unnumber all lines (blank out sequence numbers)

RESET _ Reset excluded lines and messages

SUBMIT - Submit edit data to job stream

SAVE - Save the data

CANCEL - Cancel edit without saving

FIND - Find a specified character string

CHANGE - Change a specified character string to another string

COPY - Copy data from another member or data set

MOVE - Copy data and then delete the member or data set

CREATE - Create another member or data set from edit data

REPLACE- Replace another member or data set from the edit data.

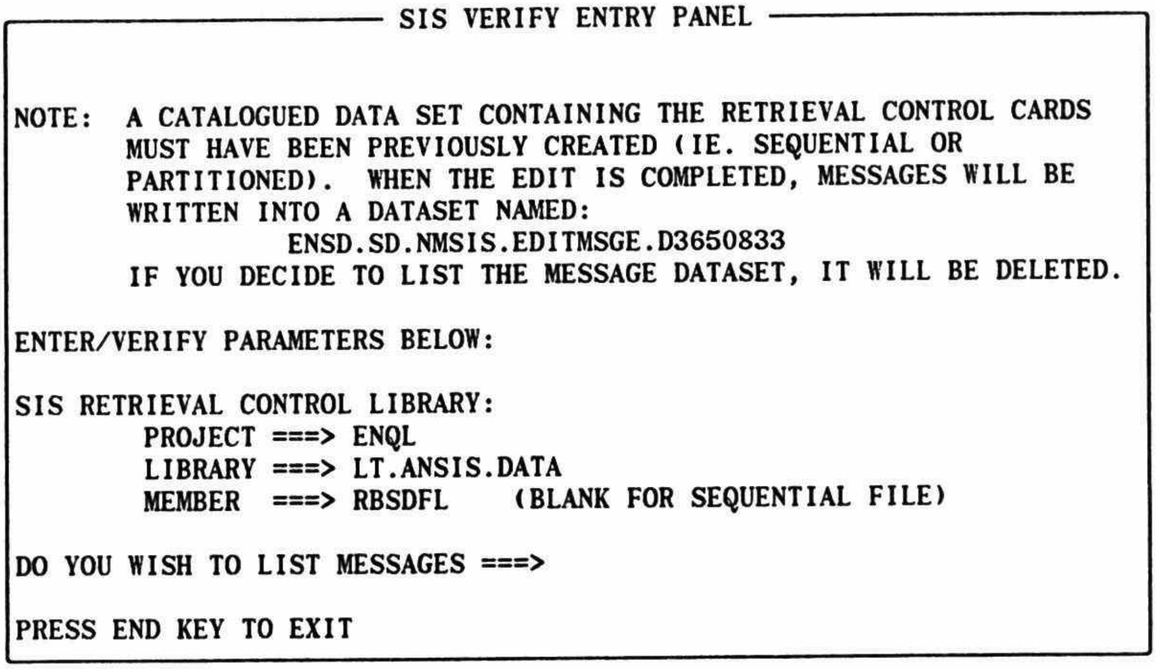
UTILITIES OPTION

```
--------------------------- UTILITY SELECTION MENU ------------------------
SELECT OPTION ===>

   1  LIBRARY    - LIBRARY UTILITY:
                             PRINT INDEX LISTING OR ENTIRE DATASET
                             PRINT, RENAME, DELETE, OR BROWSE MEMBERS
   2  DATASET    - DATASET UTILITY:
                             DISPLAY DATASET INFORMATION
                             ALLOCATE, RENAME, OR DELETE ENTIRE DATASET
                             CATALOG OR UNCATALOG DATASET
   3  MOVE/COPY  - MOVE OR COPY MEMBERS OR DATASETS
   4  COMPRESS   - COMPRESS PARTITIONED DATA SETS
   5  RESET      - RESET STATISTICS FOR MEMBERS OF SPF LIBRARY
   6  HARDCOPY   - INITIATE HARDCOPY OUTPUT
   7  PRINTOFF   - LIST DATASETS TO PRINTERS
   8  OUTLIST    - DISPLAY, DELETE, OR PRINT HELD JOB OUTPUT
   9  SCRIPT/VS  - FORMAT, DISPLAY, AND OPTIONALLY PRINT SCRIPT TEXT
 DCF  SCRIPT/VS  - PROCESS DCF DOCUMENTS(DOWNSVIEW)
  DM  DMS        - DASD MANAGEMENT SYSTEM
```

The utility option provides a variety of utility functions for: library, data set, and catalog maintenance; moving and copying data; resetting SPF library statistics; initiating hardcopy output; displaying or printing VTOC entries for a DASD volume; browsing and printing held SYSOUT data; and formatting SCRIPT/VS documentation.

For each of the utility options, a panel is displayed which allows the user to select a function and enter the appropriate library or data set information. These panels allow both option selection and data entry in a single panel format.

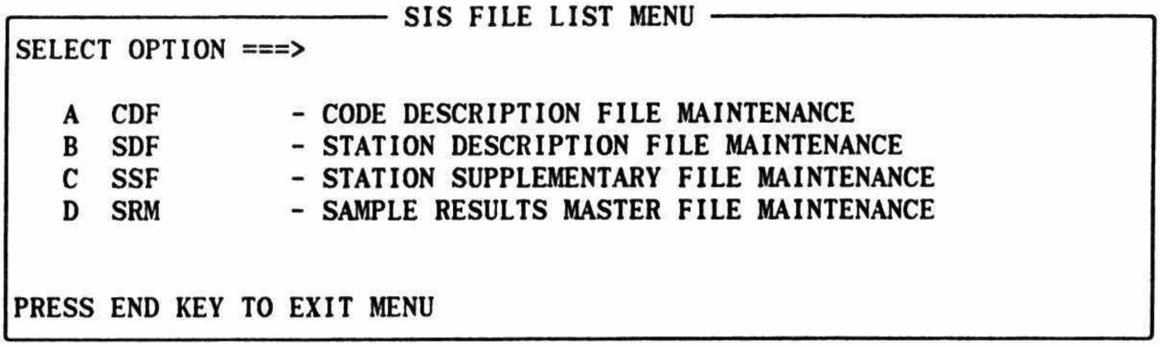
VERIFY OPTION



```
--------------------------- SIS VERIFY ENTRY PANEL ---------------------------

NOTE:  A CATALOGUED DATA SET CONTAINING THE RETRIEVAL CONTROL CARDS
       MUST HAVE BEEN PREVIOUSLY CREATED (IE. SEQUENTIAL OR
       PARTITIONED).  WHEN THE EDIT IS COMPLETED, MESSAGES WILL BE
       WRITTEN INTO A DATASET NAMED:
                ENSD.SD.NMSIS.EDITMSGE.D3650833
       IF YOU DECIDE TO LIST THE MESSAGE DATASET, IT WILL BE DELETED.

ENTER/VERIFY PARAMETERS BELOW:

SIS RETRIEVAL CONTROL LIBRARY:
        PROJECT ===> ENQL
        LIBRARY ===> LT.ANSIS.DATA
        MEMBER  ===> RBSDFL     (BLANK FOR SEQUENTIAL FILE)

DO YOU WISH TO LIST MESSAGES ===>

PRESS END KEY TO EXIT
```

The verify option allows the user to perform an online edit of retrieval control cards for syntax errors before submitting for batch processing. A catalogued data set containing the retrieval control cards must have been previously created. When the edit is completed, messages will be written into a data set whose DSNAME will be displayed at the terminal. If you decide to list the messages, the data set will be deleted, otherwise it will be kept.

LIST OPTION



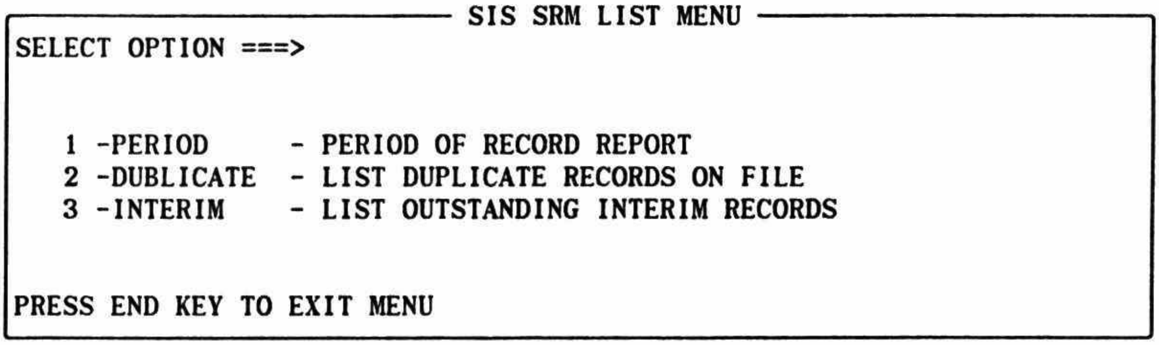
```
                            SIS FILE LIST MENU
SELECT OPTION ===>

   A  CDF          - CODE DESCRIPTION FILE MAINTENANCE
   B  SDF          - STATION DESCRIPTION FILE MAINTENANCE
   C  SSF          - STATION SUPPLEMENTARY FILE MAINTENANCE
   D  SRM          - SAMPLE RESULTS MASTER FILE MAINTENANCE


PRESS END KEY TO EXIT MENU
```

This option gives the user the opportunity to obtain lists of the support files in the SIS. Choose one of the files displayed and enter the appropriate option. Depending on the option selected, one of the panels on the following pages will be displayed.

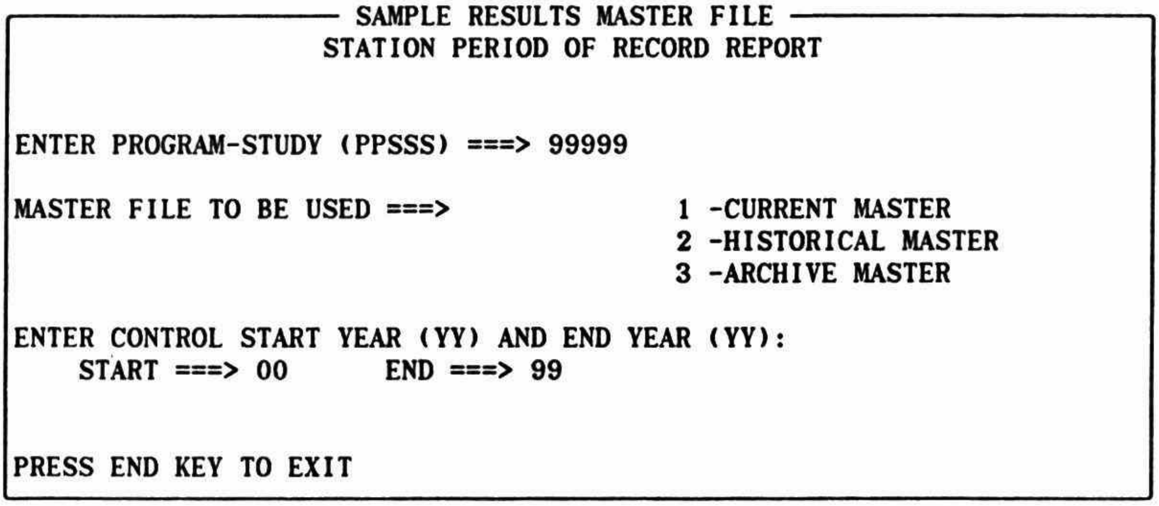
```
------------------------ CDF FILE LIST ENTRY PANEL ------------------------

ENTER REPORT TYPE       ===>             1 - FULL CDF LISTING
                                         2 - UNIT AN TEST CODES ONLY
                                         3 - PHYTO SPECIES CODES ONLY


ENTER REPORT SEQUENCE ===>

        1 -TEST NAME DESCRIPTION SEQUENCE      (SPECIES DESC)
        2 -TEST NAME SEQUENCE                  (SPECIES CODE)
        3 -TEST NAME DESCRIPTION WITHIN CLASSIFICATION
        4 -TEST NAME WITHIN CLASSIFICATION


PRESS END KEY TO EXIT
```

```
------------------------ SDF FILE LIST ENTRY PANEL ------------------------

ENTER REPORT  ===>
        1 -DETAIL SDF LIST
        2 -ABBREVIATED SDF LIST (SITE NAME AND SAMPLE POINT DESC.)

ENTER REPORT SEQUENCE ===>

        1 -STATION ID SEQUENCE
        2 -REGION SEQUENCE
        3 -SITE NAME SEQUENCE

ENTER SELECTED REGION (I.E. 01 OR ALL) ===> ALL

ENTER PROGRAM-STUDY (PPSSS) ===>

PRESS END KEY TO EXIT
```

```
------------------------ SSF FILE LIST ENTRY PANEL ------------------------

ENTER PROGRAM-STUDY (PPSSS) ===>


PRESS END KEY TO EXIT
```



```
------------------------------ SIS SRM LIST MENU ------------------------------
SELECT OPTION ===>


   1 -PERIOD      - PERIOD OF RECORD REPORT
   2 -DUBLICATE   - LIST DUPLICATE RECORDS ON FILE
   3 -INTERIM     - LIST OUTSTANDING INTERIM RECORDS


PRESS END KEY TO EXIT MENU
```



```
------------------------ SAMPLE RESULTS MASTER FILE ---------------------------
                       STATION PERIOD OF RECORD REPORT


ENTER PROGRAM-STUDY (PPSSS) ===> 99999

MASTER FILE TO BE USED ===>                  1 -CURRENT MASTER
                                             2 -HISTORICAL MASTER
                                             3 -ARCHIVE MASTER

ENTER CONTROL START YEAR (YY) AND END YEAR (YY):
    START ===> 00       END ===> 99


PRESS END KEY TO EXIT
```

RETRIEVAL OPTION

```
                    SIS SUBMIT ENTRY PANEL

SYSTEM WILL USE SELECTION CRITERIA CONTAINED IN THE REQUEST DATA FILE
SPECIFIED BELOW TO CREATE APPROPRIATE JCL

ENTER REQUEST DATA FILE TO BE USED:
  PROJECT  ===> ENQL
  LIBRARY  ===> LT.ANSIS.DATA
  MEMBER   ===> RBSDFL      (IF APPLICABLE)

USER CREATED SRM (COPY) FILE TO BE SPECIFIED (Y OR N) ===> NO
IS THIS A LARGE RETRIEVAL - OVER 7000 RECORDS         ===> NO
DENSITY FOR TAPE ===> 4          2 - 800BPI  3 - 1600BPI  4 - 6250BPI

DISPOSITION OF  CONTROL REPORT ===>       | PRINT-PRINT REPORT
                DETAIL  REPORTS ===>    <-| DISK -PLACE ON DISK FILE
                                          | TAPE -PLACE ON TAPE FILE

PRESS ENTER KEY TO CONTINUE
PRESS END KEY TO EXIT
```

This option allows the user to generate the JCL necessary to execute the data retrieval function in batch mode. The format of this panel will change as new options become available. Presently, only data for one program/ study can be retrieved in a single batch job.

Enter the required information prompted for:

a. The data set name (and member) where the retrieval control cards are found

b. If YES is entered for SRM COPY file as input you will be prompted for the DSNAME of a previously created SRM copy file.

c. Large retrievals (YES or NO) - since the work files in the retrieval can only hold a fixed number of records, the user must specify whether more than 7,000 records will be selected. If the answer is YES, all work files are changed to TAPE, and the JOB CLASS is changed to 0 - overnight processing.

d. Density for tape (default value is 6250 BPI) - This field need only be specified if data retrieved is to be stored on tape (e.g., reports, spss file, etc.) and the density required is not 6250 BPI.

e. Disposition of reports (default is print) - This field allows the user to specify the disposition of the Control report and Detail reports. You may either print the reports (at the location defined on the PROCESSING OPTION PANEL) or have them placed on a disk or tape file. The disk file can contain a maximum of 20,000 lines.

   When the disk or tape option is selected, the DSNAME of the data set which will contain the reports will be displayed.

f. If output files are requested you will be prompted for their disposition. Specify whether they are to be written on tape or disk. The SPSS40 disk file can contain a maximum of 1,900 records, while the SPSS20 disk file can contain a maximum of 3,200 records. The FILE132 disk file can contain a maximum of 25,400 records.

   The Control report will have the DSNAME of the appropriate SPSS file printed on it.

   Please note that although the disk space specified above is defined for the maximum number of records, your job may abort if you try to retrieve the maximum number as the actual space required to store the records may not be available at DCC.

Depending on the options specified on the control cards you may be prompted for additional information.

SUPPORT OPTION

```
------------------------------ SIS FILE SUPPORT MENU ------------------------------
SELECT OPTION ===>


   A -CDF        - CODE DESCRIPTION FILE MAINTENANCE
   B -SDF        - STATION DESCRIPTION FILE MAINTENANCE
   C -SSF        - STATION SUPPLEMENTARY FILE MAINTENANCE
   D -SRM        - SAMPLE RESULTS MASTER FILE MAINTENANCE

   S -SUPPORT    - SUPPORT FILES BACKUP PROCEDURE (DO MONTHLY)

   L -ACCESS LOG - PRINT ACCESS LOG
  LR -           - PRINT ACCESS LOG AND RE-INITIALIZE FILE

   U -USERID     - DEFINE (MODIFY) USERID DEFAULTS

PRESS END KEY TO EXIT MENU
```

When this option has been selected from the primary option menu the above menu is displayed. The only options available to the user are "B" - Station Description file Maintenance, and "D" - Sample Results file Maintenance.

SDF File Support Options

When option "B" is selected from the File Support Menu the SDF File Support Menu is displayed. This menu is divided into two sections:

a. System Operation Functions, and

b. User Functions.

```
------------------------- SDF FILE SUPPORT ---------------------------
SELECT OPTION ===>


 SDF UPDATE PROCESSING (SYSTEMS OPERATIONS):
   A - BACKUP SDF FILE
   B - TRANSACTION UPDATE FROM DISK FILE

 OTHER SDF FILE PROCESSING (USER BRANCHES):
   T - CREATE SDF CHANGE TRANSACTIONS VIA TERMINAL

PRESS END KEY TO EXIT MENU
```

The functions available to the user are discussed below:

Option T - Create SDF Change Transactions Via 3270 Terminal

When the option “T” is specified the SDF UPDATE ENTRY panel will be displayed. The user is to enter the program/ study and the data set name.

The instructions for the ENTRY panel are:

a) Fill in the appropriate program/ study code (PPSSS) for which all input will apply.

b) If a new transaction data set is to be created use the DSNAME shown when then panel is displayed. The DISP field is to contain a value of NEW.

If you wish to use a previously allocated sequential data set, fill in the appropriate DSNAME and enter a value of OLD in the DISP field. In this case all input entered will be added to the end of the data set (data already on the data set will not be erased).

```
------------------------ SDF UPDATE ENTRY PANEL ------------------------
ENTER PROGRAM/STUDY ===> 01002

TRANSACTION DSNAME ===> ENSD.SD.NMSIS.SDFUPDTE.D3650833
            DISP   ===> NEW

INSTRUCTIONS:
     1 - FILL THE APPROPRIATE PROGRAM/STUDY CODE FOR WHICH
         ALL INPUT WILL APPLY.

     2 - IF A NEW TRANSACTION DATASET IS TO BE CREATED USE THE DSNAME
         SHOWN WHEN THIS PANEL APPEARED. THE DISP FIELD IS TO CONTAIN
         NEW.
         IF YOU WISH TO USE A PREVIOUSLY ALLOCATED SEQUENTIAL DATASET,
         FILL IN THE APPROPRIATE DSNAME AND ENTER OLD IN THE DISP
         FIELD. IN THIS CASE ALL INPUT ENTERED WILL BE ADDED TO THE
         END OF THE DATASET (DATA ALREADY ON THE DATASET WILL
         NOT BE ERASED).

PRESS END KEY TO EXIT
```

Once the ENTER key is pressed, the SDF UPDATE PANEL is displayed. This panel will be displayed for each record to be added or changed.

The panel can be divided into two sections:

Section 1: - Identifies the individual station id record being updated. The user must key in the Station ID (left justified). The Transaction code field is to contain a value of "A" if this is a new record, "C" if the record already exists on the SRM master file or "D" if the record is to be deleted from a master file.

The RECORD COUNT field is incremented by 1 each time a transaction is created during the session.

The STATION ID field appears on the top of other panels, although it cannot be modified.

If a transaction code of "D" is selected, no futher data is required - press the ENTER key.

Sections 2: - This section corresponds to the card types found on the SDF change form.

The maximum length of a field is the same as that on the SDF Change Form. Where a decimal is required for a specific field, enter the decimal (i.e. distance could be entered as 34.671 or 23). All values are to be entered left justified.

Once the appropriate information has been entered on the first panel and the ENTER key pressed, the second SDF panel will be displayed. Enter appropriate values and hit the ENTER key. The first SDF panel will then be re-displayed for the next input record.

```
----------------------------------- SDF UPDATE PANEL ---------------------
PROGRAM/STUDY ===>                   TRANSACTION CODE ===>    <== A C D

STATION ID  ===>                                        RECORD COUNT:

  BODY OF WATER/SITE NAME     ===>
  SAMPLE PT DESCRIPTION 1     ===>
                        2     ===>

  STATION TYPE DESCRIPTION    ===>
  PLANT DESCRIPTION           ===>
  MUNICIPALITY/TOWNSHIP       ===>

  MJR BASIN ===>        DESC ===>
  MIN BASIN ===>        DESC ===>
  TERM STRM ===>        DESC ===>
  DISTANCE  ===>

PRESS ENTER TO CONTINUE

PRESS END KEY TO EXIT
```

```
----------------------------------- SDF UPDATE PANEL ---------------------
PROGRAM/STUDY ===>                   TRANSACTION CODE ===>    <== A C D

STATION ID  ===>                                       RECORD COUNT:

  LATITUDE  DEG ===>       MIN ===>       SEC ===>
  LONGITUDE DEG ===>       MIN ===>       SEC ===>       PREC ===>

  UTM ZONE ===>      EAST ===>          NORTH ===>       PREC ===>

  MINISTRY REGION       ===>          DIST ===>   CONFIDENTIAL ===>
  MUNICIPAL CODE        ===>          CONC ===>            LOT ===>
  ELECTORIAL            ===>        AGENCY ===>
  SETUP DATE (YYMMDD)   ===>          TERM ===>

  UTILITIES       TYPE  ===>          AUTH ===>
          MJR TREAT 1   ===>             2 ===>          3 ===>
          MIN TREAT 1   ===>             2 ===>          3 ===>
                    4   ===>             5 ===>          6 ===>
                    7   ===>             8 ===>          9 ===>

  USER DATA             ===>

PRESS ENTER TO CONTINUE, END KEY TO EXIT
```

When all update changes have been entered, and the user exits from the SDF Entry Function, a Batch job will be set up to reformat the transaction dataset just processed. When you exit from SIS, you will be prompted if you want to submit created JCL. You must answer YES. The same dataset can be processed as many times as required.

For each Branch/ Region, a log is to be kept for each dataset created. This dataset should contain all SDF Transactions for all program/studies. All users in the Branch/ Region are to use the same file to input transactions and are not to create individual datasets. This will eliminate unnecessary updates. Users should also fill one dataset on a weekly basis and then have the SDF update take place. These precautions will help reduce the cost of the master file updates.

When all update changes have been entered, the user is to inform Systems Operations that an update is to be carried out. Systems will require the following information to do the update:

a) User Name requesting the update

b) Program/Study code

c) Transaction Dataset Name

d) Remote terminal ID if output is to be printed at Regional office.

Once an update has taken place, a entry should be entered in the log showing that the dataset has been processed. Users can use SPF to make changes to the any errors contained in the dataset. The user is responsible to delete the dataset once all processing has been completed.

SRM File Support Options

When option “D” is selected from the File Support Menu the SRM File Support Menu is displayed.

```
------------------------------ SRM FILE SUPPORT ------------------------------
SELECT OPTION ===>


 SRM UPDATE PROCESSING (SYSTEMS OPERATIONS):
   1 - STEP1: RUN LIS STATISTICS / LIS BACKUP (TO BE DONE BEFORE STEP2)
   2 - STEP2: RUN LIS/SRM UPDATE

   3 - TRANSACTION UPDATE FROM DISK FILE
   4 - OBSERVATION WELL LEVELS UPDATE
   6 - BACKUP SRM MASTER FILE (YOU WILL BE PROMPTED FOR FILE NO.)
   7 - SRM MERGE

 OTHER SRM FILE PROCESSING (USER BRANCHES):
   T - CREATE SRM CHANGE TRANSACTIONS VIA TERMINAL

PRESS END KEY TO EXIT MENU
```

This menu is divided into two sections:

a. System Operation Functions, and

b. User Functions.

The functions available to the user are discussed below:

Option T - Create SRM Change Transactions Via 3270 Terminal

When the option “T” is entered the first panel which will be displayed is the SRM UPDATE ENTRY panel. The user is to enter the program/ study and the data set name prompted for.

The instructions for the ENTRY panel are:

a) Fill in the appropriate program/ study code (PPSSS) for which all input will apply.

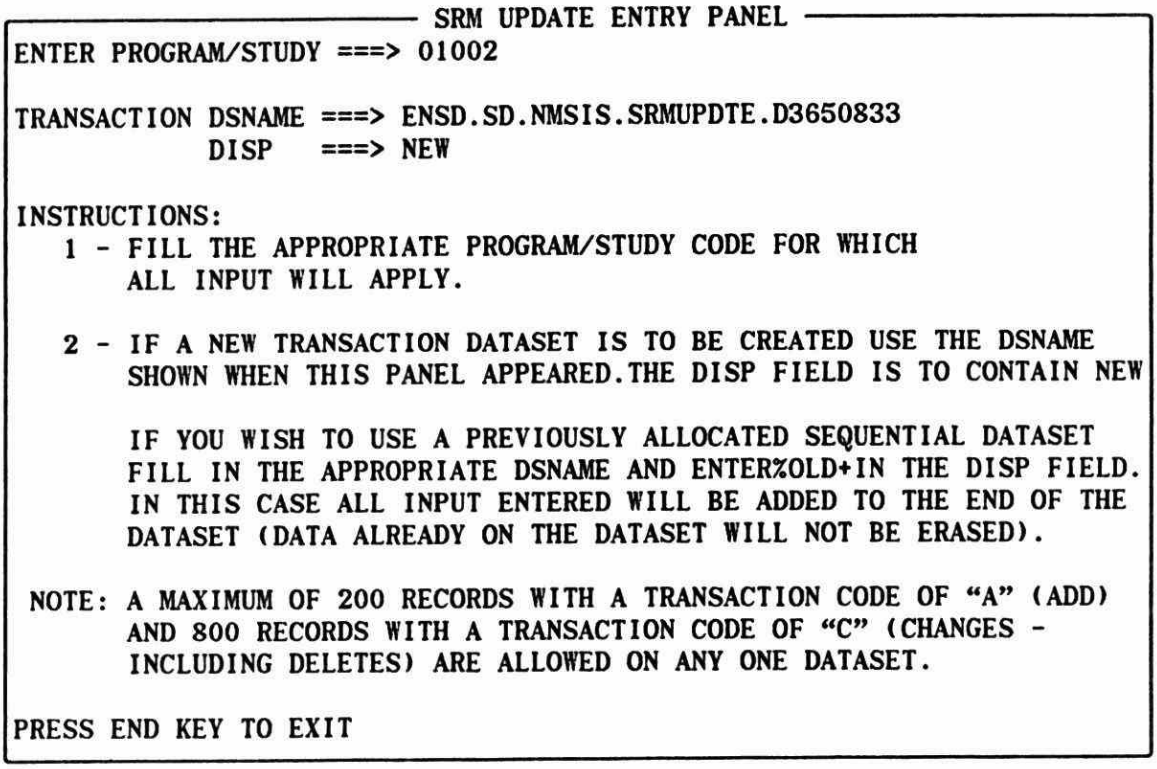
b) If a new transaction data set is to be created use the DSNAME shown when then panel is displayed. The DISP field is to contain a value of NEW.

If you wish to use a previously allocated sequential data set, fill in the appropriate DSNAME and enter a value of OLD in the DISP field. In this case all input entered will be added to the end of the data set (data already on the data set will not be erased).

NOTES:

c) All data contained on the data set is to update one master file only (e.g., current, historical or archive).

d) A maximum of 200 records with a transaction code of “A” (add) and 800 records with a transaction code of “C” (changes - including deletes) are allowed on any one data set.



```
------------------------- SRM UPDATE ENTRY PANEL -----------------------
ENTER PROGRAM/STUDY ===> 01002

TRANSACTION DSNAME ===> ENSD.SD.NMSIS.SRMUPDTE.D3650833
            DISP   ===> NEW

INSTRUCTIONS:
   1 - FILL THE APPROPRIATE PROGRAM/STUDY CODE FOR WHICH
       ALL INPUT WILL APPLY.

   2 - IF A NEW TRANSACTION DATASET IS TO BE CREATED USE THE DSNAME
       SHOWN WHEN THIS PANEL APPEARED.THE DISP FIELD IS TO CONTAIN NEW

       IF YOU WISH TO USE A PREVIOUSLY ALLOCATED SEQUENTIAL DATASET
       FILL IN THE APPROPRIATE DSNAME AND ENTER%OLD+IN THE DISP FIELD.
       IN THIS CASE ALL INPUT ENTERED WILL BE ADDED TO THE END OF THE
       DATASET (DATA ALREADY ON THE DATASET WILL NOT BE ERASED).

 NOTE: A MAXIMUM OF 200 RECORDS WITH A TRANSACTION CODE OF “A” (ADD)
       AND 800 RECORDS WITH A TRANSACTION CODE OF “C” (CHANGES -
       INCLUDING DELETES) ARE ALLOWED ON ANY ONE DATASET.

PRESS END KEY TO EXIT
```

Once the ENTER key is pressed, the SRM UPDATE PANEL is displayed. This panel will be displayed for each record to be added or changed.

The panel can be divided into two sections:

Section 1: - Identifies the individual sample records being updated. The user must key in the Station ID (left justified). The Transaction code field is to contain a value of “A” if this is a new record, “C” if the record already exists on the SRM master file or “D” if the record is to be deleted from a master file.

The RECORD COUNT field is incremented by 1 each time a transaction is created during the session.

The STATION ID, sample date and sample number fields appear on the top of other panels, although they cannot be modified.

If a transaction code of “D” is selected, no futher data is required - press the ENTER key.

Sections 2: - This section corresponds to the card types found on the SRM change form.

The maximum length of a field is the same as that on the SRM Change Form. Where a decimal is required for a specific field, enter the decimal (i.e. sample depth could be entered as 34.67 or 23). All values are to be entered left justified.

Result values can be coded to a maximum of 3 decimal places (i.e. 3.345, 3.4, -4.376E+02, 0.567E-01, 8945)

Once the appropriate information has been entered and the ENTER key pressed, the RESULT VALUE panel will be displayed if changes are required to specific tests. A maximum of twelve tests may be specified on the panel at any one time. The panel will be re-displayed if more than twelve tests are required. No blank lines are allowed between entries. When all entries have been made, the UPDATE PANEL will be re-displayed for the next input record.

```
------------------------------------- SRM UPDATE PANEL ---------------------------------
PROGRAM/STUDY ===> 99999                            TRANS CODE ===> A     <== A C D

STATION ID  ===>                                                RECORD COUNT: 000
SAMPLE DATE (YYMMDD) ===>                  SAMPLE NO  ===>

CARD TYPE A
  DISTANCE FROM SHORE ===>                     WATER DEPTH      ===>
  SAMPLE TIME (HHMM)  ===>                     WATER LAYER      ===>
  SAMPLE DEPTH        ===>                     BEAR FROM REF    ===>
  SAMPLE TYPE         ===>                     RECORD STATUS    ===>
CARD TYPE G                                  CARD TYPE R
  PROJECT             ===>                     STATION ID  ===>
  SUB-PROJECT         ===>                     SAMPLE DATE ===>
  SAMPLING AGENCY     ===>                     SAMPLE NO   ===>
  ANALYSIS AGENCY     ===>
CARD TYPE I
  SAMPLER SURNAME     ===>
  LIS SUBMISSION      ===>

CARD TYPE P REQUIRED ===> YES
NOTE:  TO CHANGE SAMPLE TYPE DATA, KEY IN THE APPROPRIATE SAMPLE CODE
PRESS END KEY TO EXIT
```

```
-----------------------------SRM UPDATE PANEL / RESULT VALUES ---------------------------
PROGRAM/STUDY ===> 99999

STATION ID  ===>
SAMPLE DATE ===>             SAMPLE NO. ===>

 RESULT VALUE HAS MAXIMUM OF 3 EXPLICIT DECIMALS (I.E 4.32 NOT .3245)
 EXPONENT CAN BE SPECIFIED WITH 3 DECIMALS (I.E. 4.437E-01)
                          ANALYSIS      UNIT OF
    TEST NAME              METHOD       MEASURE        REMARK        RESULT VALUE
 ===>          ==>          ===>          ===>      ===>
 ===>          ==>          ===>          ===>      ===>
 ===>          ==>          ===>          ===>      ===>
 ===>          ==>          ===>          ===>      ===>
 ===>          ==>          ===>          ===>      ===>
 ===>          ==>          ===>          ===>      ===>
 ===>          ==>          ===>          ===>      ===>
 ===>          ==>          ===>          ===>      ===>

ARE THERE MORE TESTS TO BE ENTERED ===> NO
PRESS END KEY TO EXIT
```

When all update changes have been entered, and the user exits from the SRM Entry Function, a Batch job will be set up to reformat the transaction dataset just processed. When you exit from SIS, you will be prompted if you want to submit created JCL. You must answer YES. The same dataset can be processed as many times as required.

For each Branch/ Region, a log is to be kept for each dataset created and for which file it is to update (program/study - current, historical, archive). All users in the Branch/ Region are to use the same dataset to input transactions for the same program/study and are not to create individual datasets. This will eliminate unnecessary updates. Users should also fill one dataset on a weekly basis and then have the SRM update take place. These precautions will help reduce the cost of the master file updates.

When all update changes have been entered, the user is to inform Systems Operations that an update is to be carried out. Systems will require the following information to do the update:

a) User Name requesting the update

b) Program/Study code

c) Transaction Dataset Name

d) Which file is to be processed (i.e. current, historical or archive)

e) Remote terminal ID if output is to be printed at Regional office.

Once a update has taken place, a entry should be entered in the log showing that the dataset has been processed. Users can use SPF to make changes to the any errors contained in the dataset. The user is responsible to delete the dataset once all processing has been completed.

TUTORIAL OPTION

The tutorial option provides immediate online reference and instruction on how to use SIS. It may be invoked from the primary option menu or via the HELP PF key. The tutorial may be viewed sequentially from beginning to end, or it may be viewed randomly by selecting specific topics from an alphabetic index or table of contents.

When the tutorial is invoked from the primary option menu, introductory pages are displayed to explain how the tutorial works. Following the introduction, a table of contents is displayed from which the user may select a topic by entering the desired selection number.

When the tutorial is invoked via the HELP key, the appropriate section of the tutorial is entered based on what the user was doing when the HELP key was pressed.

When viewing the tutorial, the user may select topics by number, or simply press the ENTER key to view the next topic. On any panel, the user may also enter the following commands:

BACK	or B	- to backup to the previously viewed page
SKIP	or S	- to skip to the next topic
UP	or U	- to display a higher level list of topics
TOP	or T	- to display the table of contents
INDEX	or I	- to display the tutorial index

During execution of the tutorial, the four scroll PF keys are interpreted as follows:

UP	- display higher level list of topics
DOWN (skip)	- skip to the next topic
LEFT (back)	- display previous tutorial page
RIGHT (next)	- display next tutorial page

The ENTER key also meams “next”.

The HELP PF key may pressed at any time to display a one-page summary of how to use the tutorial.

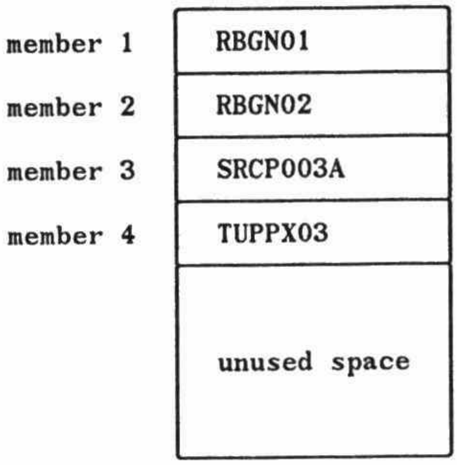
The tutorial function is terminated by pressing the END PF key. This causes a return either to the primary option menu or to the display from which the user requested help.

SPECIAL PROCESSING FOR NON-3270 TYPE TERMINALS

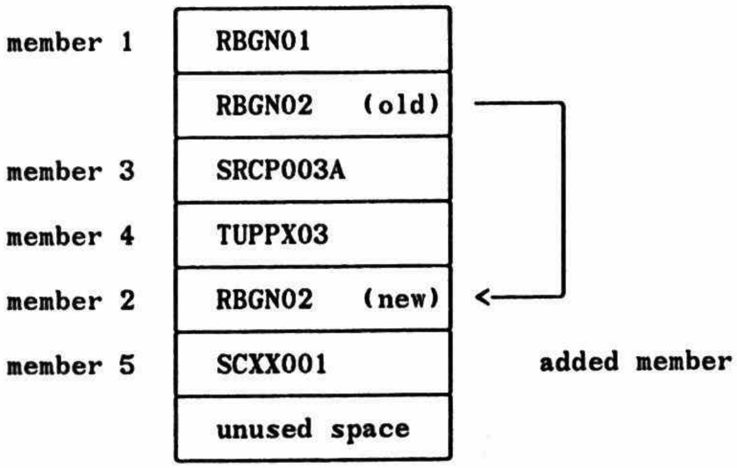
GENERAL

This section describes special processing functions available to aid the non-3270 terminal User in creating and maintaining a partitioned dataset to contain the SIS selection control cards to retrieve data. The functions which are described later are available thru option 3 on the PRIMARY MENU - UTILITY.

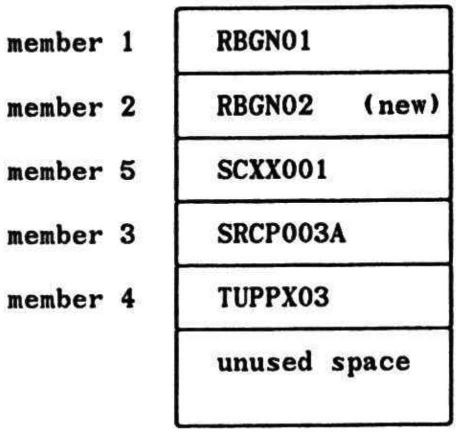
A partitioned dataset consists of independent groups of sequential organized records, called "members" on a disk storage device. Each member has a simple 4 to 8 character name stored in a directory that is part of the dataset and contains the location of the members start point. Partitioned datasets are generally used to store programs. As a result, they are often referred to as libraries. For example, the following dataset named ENSD.NMSIS.DATA contains 4 members:



When the User modifies (adds, changes or deletes) records within a member and the member is saved,the system stores the new version in the "unused space" area and changes the entry in the directory to reflect the new location. The old version is unavailable to the User. For example, the member 2 - RBGN02 is modified and saved and then a new member SCXX001 is added:



As you can see, the "unused space" area will eventually become filled. When this condition occurs, the User will receive a system error message B37 or E37 and dataset compression must be done. This is explained later in this section. To ensure that this condition does not arise the User should perform the dataset COMPRESS function on a regular basis. After a COMPRESS function the dataset resembles the following:



DATASET NAMES

Dataset names should be structured according to your TSO USERID. Your USERID consists of six characters of which the first four comprise the prefix which is assigned to each Branch or Region. The last two characters identify the individual. For example:

“prefix.userSIS.DATA”

where -

PREFIX -
is the prefix, assigned to each branch or region, and comprises the first 4 characters of the USERID. (i.e. ENQL - Water Resources).

USER -
is the initials obtained from the userid of the person executing the SIS TSO procedure. The initials are followed by the letters “SIS” or any other six characters.

DATA -
is the lower level qualifier which describes the type of information contained in the dataset. This value can also be specified as:

FORTG1 - for FORTRAN source programs - version G1
FORTH - for FORTRAN source programs - version H
PL1 - for PL1 source programs
CNTL - for JCL statements
COBOL - for COBOL source programs
CLIST - for TSO CLISTS
DATA - for user data

An example of a dataset name created by the USERID ENSDNM would be “ENSD.NMSIS.DATA”.

When ever the SIS system prompts you for a dataset name, enter the fully qualified name. For example “ENSD.NMSIS.DATA”. If you are prompted for the dataset name and member name, enter the member name within parenthesis following the dataset name. For example “ENSD.NMSIS.DATA(RBGN02)”.

UTILITY FUNCTIONS

```
                          UTILITY SELECTION MENU

   1  ALLOCATE   - ALLOCATE A NEW DATASET
   2  RENAME     - RENAME A EXISTING DATASET
   3  DELETE     - DELETE AN ENTIRE DATASET
   4  LIST       - LIST INDEX OF MEMBERS IN DATASET

   5  COPY       - COPY MEMBER (create new member)
   6  PURGE      - DELETE MEMBER
   7  PRINT      - LIST MEMBER

   C  COMPRESS   - COMPRESS PARTITIONED DATA SETS
   X  EXIT       - EXIT - RETURN TO PRIMARY MENU

SELECT OPTION ===>
```

The utility option provides a variety of utility functions for: library, data set, and catalog maintenance; moving and copying data.

For some of the utility options, a panel is displayed which allows the user to select a function and enter the appropriate library or data set information. These panels allow both option selection and data entry in a single panel format.

The Utility Menu options available are:

- ALLOCATE - To allocate space for a new dataset.
- RENAME - To rename an existing dataset to a new name.
- DELETE - To delete an entire dataset -including all members.
- LIST - To list the member names contained in a dataset.
- COPY - To copy one member to a "new" member name within the same or another partitioned dataset.
- PURGE - To delete a member of a partitioned dataset.
- PRINT - To list the records of a member of a partitioned dataset.
- COMPRESS - To perform the compress function.

- EXIT - To return to the primary menu.

Depending on the option chosen, you will be prompted for additional information.

Every control statement consists of a 80 character card image record on a disk data set and is logically divided into different fields. There are Three fields - operation field, operand field and the sequence field.

Operation Field

Specifies the type of control statement and consists of a keyword. It must begin in column 1 and followed by at least 1 blank before operands are coded.

Operand Field

Contains parameters separated by commas. The operand field must follow the operation field and be proceeded by at least 1 blank and must terminate before column 73.

Sequence Field

Contains the sequence numbers of the record in columns 73-80. Control cards must be numbered.

Parameters In The Operand Field

The operand field contains parameters which may be followed by an equal sign "=" and variable information called sub-parameters. These parameters can be coded anywhere in the operand field with respect to one another. Because of this positional independence, you need not indicate the absence of a parameter. If a parameter and its associated sub-parameters will not fit on one card, code them onto a subsequent continuation card. A continuation card is denoted by at least column 1 being blank.

The following page shows an example of retrieval control cards. Subsequent pages describe the keywords and parameters which are available at the present time. IF the keyword is underlined, it must be coded.

RETRIEVAL CONTROL CARD FILE EXAMPLE

```
 ------------------ COLUMN 1
|        ---------- COLUMN 10                   COLUMN 73 -----
|       |                                                      |
V       V                                                      V

PROGRAM  01002                                                 00010000
DATE     FROM=76,TO=77,FROM=7806,TO=7810                       00020000
OPTIONS  STATDET,COMPRESS,SDFLIST,CDFLIST,CRITSTAT             00030000
HEADING  SIS RETRIEVAL CONTROL CARD EXAMPLE                    00040000
STATIONS BASIN=1,STREAM=1,NUM=1,3                              00050000
         BASIN=10,STREAM=502,NUM=1,12,TYPE=2                   00060000
         BASIN=12                                              00070000
CRITERIA CODE=F1,2,CODE=A2,CODE=P4,CODE=I1                     00080000
SEASONS  FROM=770101,TO=780630,FROM=780701,TO=791231           00090000
SAMPLE   011,61,62                                             00100000
DEPTH    RANGE=B,3,15,RANGE=B,25,50,DISTANCE=150.8             00110000
TESTS    TEST=SAMPLE                                           00120000
         TEST=FWTEMP                                           00140000
         TEST=DO                                               00150000
         TEST=BOD5                                             00160000
         TEST=PPUT,UNIT=063,951,MIN=16.32E-03,MAX=23           00170000
         TEST=COND25                                           00180000
         TEST=ALKT                                             00190000
         TEST=PH                                               00200000
         TEST=TURB                                             00210000
         TEST=HARDT                                            00220000
         TEST=PBUT,UNIT=063,882                                00230000
         TEST=CDUT                                             00240000
         TEST=NIUT                                             00250000
```

Syntax Notation Conventions

The notation used to define the control syntax and format in this manual is described in the following paragraphs.

a. The set of symbols listed below is used to define the format, but you should never type them in the actual statement.

hyphen “-”

underscore “_“

brackets “{ }”

ellipsis “....”

The special uses of these symbols are explained in the following paragraphs.

b. You should type uppercase letters, and the set of symbols listed below in an actual command exactly as shown in the statement definition.

asterisk “*”

comma “,”

equal sign “=”

parenthese “( )”

period “.”

colon “:”

c. Lowercase letters appearing in a command statement definition represents variables for which you should substitute specific information in the actual command.

d. Stocked items represent alternatives. You should select only one item. For example, the representation

$$\begin{bmatrix} A \\ B \\ C \end{bmatrix}$$

indicates that A OR B OR C is to be selected.

e. An underscore indicates a default option. If you select an underscored alternative, you need to specify the default value when you code the command. For example, the representation

$$\begin{bmatrix} A \\ B \\ \\ \bar{C} \end{bmatrix}$$

indicates that you are to select A OR B OR C; however, if you select B, you need not specify it, because it is the default option.

f. Braces group related items, such as alternatives. For example, the representation

$$\begin{bmatrix} \begin{matrix} A \\ B \\ C \end{matrix} , D \end{bmatrix}$$

indicates that you must chose one of the items enclosed within the braces. If you select A, the result is ALPHA=A.

g. Brackets also group related items: however, everthing within the brackets is optional and may be ommited.

h. An ellipsis indicates that the preceeding item or group of items can be repeated more than once in succession.

i. Stocked items - alternatives; specify only one item from the stock. Items in a stock may be either simple (single-line as the above examples) or complex (multiple choice). For example

$$\begin{bmatrix} \begin{bmatrix} AA \\ BB \end{bmatrix} \\ \\ \begin{bmatrix} CC \\ DD \end{bmatrix} \end{bmatrix}$$

represents a two-item stock.

PROGRAM Keyword

Use the PROGRAM keyword to define the sampling program for which data is to be retrieved.

```
PROGRAM   [ value-1 ]   [ ,value-2,....value-10 ]
```

Up to ten sampling program codes may be specified. The structure of the code consists of four sub-fields, namely:

```
program          - 2 characters
  study          - 3 characters
    project      - 2 characters
      sub-project - 2 characters
```

At least one value must be coded on the statement specifying the program/ study sub-fields. Zero filling within each sub-field is required when coded. If more than one sampling program code is specified, all of them must have the same value in the program/ study sub-fields.

Examples:

a. PROGRAM 01002

b. PROGRAM 0100201,010020603,010020605

DATE Keyword

Use the DATE keyword to define date ranges for which sample result data is to be retrieved.

```
DATE   [FROM=value-1a]  [,TO=value-1b ,FROM=value-2a,TO=...]
```

Up to four date ranges may be specified. A value must be specified for the first FROM variable. Each range consists of a FROM and an optional TO value. When a TO value is coded, there must be a corresponding FROM value coded.

The values are in the format YYMMDD where:

YY - is the year

MM - is the month

DD - is the day

The ranges must not overlap. If the month and day values are not required, do not code them. When present, they must be zero filled.

Examples:

a. DATE FROM=72

b. DATE FROM=72,FROM=74,FROM=7604,TO=7610

c. DATE FROM=720130,TO=7310,FROM=76,TO=7806

STATION Keyword

Use the STATION keyword to define the locations for which data is to be retrieved. This keyword must be present unless the REGION or UTM keyword is coded.

```
STATION  [ [ALL]
           [ID=from value , to value]
           [BOW=value,SUBSEC=value,TYPE=value,NUM=from,to]
           [BASIN=value,STREAM=value,NUM=from,to,TYPE=value] ]
```

Only one of the above lines can be used, based on the format of the station id number. The BASIN option is used for those programs which have their station id in the "River Basin" format. The BOW option is used for those programs which use the "Great Lakes" format. All others are to use the ID option. If all stations are required use the ALL option.

Each of the above options (lines) can be repeated up to 200 times with the STATION keyword appearing on the first occurance.

For the BASIN and BOW option, code only the level required. Zero filling of numbers is not required (e.g., value of "0001" would be coded as "1".

For the ID option, the FROM and TO value consists of the actual station id number.

Examples:

```
a)    STATION ID=03198761,04167751
              ID=67003821
              ID=67004001,79001012

b)    STATION BASIN=6
              BASIN=10,STREAM=103,NUM=1,100,TYPE=02
              BASIN=16,STREAM=220
              BASIN=16,STREAM=450,TYPE=01

c)    STATION BOW=1,SUBSEC=23,TYPE=02,NUM=6,101
              BOW=16
              BOW=17,SUBSEC=40
```

OPTION Keyword

Use the OPTION keyword to define the processing required for the retrieval.

```
OPTION        STATDET         -Station Detail Report
              STATPHTO        -Station Detail report-Phytotox.
              STATSUM         -Station Summary Report
              PUBLDET         -Publication Detail Report
              PUBLSUM         -Publication Summary Report

             ,COMPRESS        -Eliminate test names on above
                               reports for which data missing
             ,NOTOTAL         -Eliminates statistics printed
                               on Station Detail Report
             ,TIME            -Will convert reported sample
                               time from local time to
                               Greenwich time

             ,PARASUM         -Parameter Summary Report
             ,LISTSDF         -Selected SDF Report
             ,LISTSRM         -Selected SRM Dump Report
             ,LISTCDF         -Selected Test Code Report
             ,COPYSDF         -Create selected SDF file
             ,COPYSRM         -Create selected SRM file
           * ,COPYCDF         -Create selected CDF file

              ,SPSS20         -Create SPSS 20 bucket file
              ,SPSS40         -Create SPSS 40 bucket file
              ,FILE132        -Create 132 file (tests only)
              ,FILE132A       -Create 132 file (all data)

             ,CRITSTAT        -Criteria Station Report
             ,CRITPARA        -Criteria Parameter Report
             ,CRITEX          -Criteria Station Exceedence Rep.

             ,CONFID          -Will retrieve data for stations
                               with a value in the Confidential
                               field on the SDF plus all others
                             HIS Stream Flow Conversion:
              ,FLOW=1          -Create SRM update Transactions
                    2          -Insert flow on SPSS40 file
                    3          -Insert additional flows on
                                SPSS40 file for records missing
                                days
```

* NOTE: Not available as of this release.

When the SPSS20 option is specified, a maximum of 20 test names may be specified. When the SPSS40 option is specified, a maximum of 40 test names may be specified.

There is no restriction on the number of tests that can be specified outside of the retrieval maximum of 300 for the FILE132 option.

When the SPSS20, SPSS40 or FILE132 options are specified the report COMPRESS option is not to be specified.

To optimize the execution time of the retrieval system, the COMPRESS option should NOT be used when only 10 tests are requested or when 20 tests are requested but less than 12 sample records will be selected and printed per station.

Examples:

a) `OPTION STATDET,COMPRESS,SDFLIST`

TEST Keyword

Use the TEST keyword to define the test names (parameters) for which sample result data is to be retrieved.

```
TEST   TEST=   ┌─                               ─┐
               │  ┌─        ─┐                   │
               │  │ALL       │                   │
               │  │value     │                   │
               │  └─        ─┘                   │
               │                                 │
               │  ,METHOD=analysis method        │
               │                                 │
               │  ,UNIT=unit,scale               │
               │                                 │
               │  ,MIN=value                     │
               │                                 │
               │  ,MAX=value                     │
               │                                 │
               │  ,SAMP=minimum number of samples│
               │                                 │
               │  ,LEVEL=1                       │
               │         2                       │
               │         3                       │
               │                                 │
               │  ,EXCLUDE                       │
               └─                               ─┘
```

Up to 300 test names may be specified. For each test name several parameter options may be coded.

TEST

This “value” is replaced by the test name for which data is to be retrieved. The TEST=ALL option is used only where a retrieval is to be made for the LISTSRM or COPYSRM options and all tests found for retrieved records are to be printed. Duplicate test names are allowed only if the METHOD parameter is coded.

METHOD

This parameter allows the user to retrieve data for a specific analytical method. If the value on the SRM file contains embedded spaces (e.g. RG 24) code the spaces with a dash “-”

(e.g. RG—24).

UNIT

This parameter allows the user to retrieve sample results data in a unit of measure different from that stored on the SRM file. both the "unit" and "scale" values are required.

It is the responsibility of the user to check the Code Description File Listing to ensure that a conversion factor has been defined to convert the stored value to the requested unit of measure.

Examples:

stored unit of measure: 064806
requested unit of measure: 066,808

Since the requested scale is not equal to the stored scale value the user must ensure that three conversion factors are specified on the CDF file to:

1) convert "scale" 806 to "dimension" 064

2) convert "dimension" 064 to 066

3) convert "dimension" 066 to "scale" 808

NOTE: If the unit of measure for the test name stored on the SRM file is not equal to the default unit of measure as specified on the CDF file, a UNIT value <u>must</u> be specified.

If a requested test for a sample record is retrieved and the unit value for the test is not equal to the CDF default or the user defined values, the test will be rejected for this record and the following message will be written on the Retrieval Control Report:

```
UNIT CONVERSION NOT SPECIFIED AND SRM UNIT "xxxxxx" NOT =
CDF DEFAULT "xxxxxx" FOR TEST "tttttt" FOR STATION ID:
"sss", DATE "dddddd", SAMPLE NO "nnnnnnnn" - TEST REJECTED
FOR RECORD.
```

Processing will continue.

MIN And MAX

These two parameters are used to specify limits for the particular test name. Either the MIN or MAX or both may be specified. The format of the value is as follows:

1) If the value to be coded is greater than 9999.999 or less than .009 code it with an exponent (e.g., E+99). There must be a decimal present.

2) Negative values are preceeded by a "-" sign.

3) MAX value must be greater than the MIN value.

Examples:

1) MIN=-11

2) MIN=66.01,MAX=10.0E+02

3) MAX=106.09E-03

SAMP

This parameter id required whwn report type CRITSTAT has been requested. The purpose of this parameter is to define the minimum number of samples required in each caculation and reject those tests with insufficient data. System default is zero. Maximum value is 99999.

LEVEL

This parameter is used to indicate the criteria level to be used for comparision i.e., permissible, desirable, or some arbitarily assigned reference level. The permissible and desirable criteria level values are stored on the Supplementary Station File. If an arbitrarily value is to be assigned for a specific test name, code the MIN and MAX values. The values are:

1 = Permissible

2 = Desirable

3 = Arbitrarily assigned value

The default is "1"

EXCLUDE

This parameter is used to indicate to the system that a sample record is to be bypassed in the selection process if the test name specified is not found on the sample record.

HEADING Keyword

Use the HEADING keyword to define up to 5 lines of 60 characters each to be printed on the title page.

```
HEADING        [ line-1       ]

               [ line-2       ]
                  "           "
               [ line-5       ]
```

Each line must start in column 10. Each line coded will be automatically centered on the title page.

TITLE Keyword

Use the TITLE keyword to define up to 2 lines of 60 characters each to be printed on the top of each detailed report produced.

```
TITLE        [ line-1 ]

             [ line-2 ]
```

Each line must start in column 10. Each line coded will be automatically centered.

DEPTH Keyword

Use the DEPTH keyword to specify depth renges or water layer layers (lake stations) for which data is to be retrieved. This keyword is also used to specify the distance from a base station.

```
             [ [           [ layer code                          ] ]
             [ [           [ [ B                               ] ] ]
DEPTH        [ [ RANGE=    [ [ S ,lower limit,upper limit      ] ] ]
             [ [           [                                     ] ]
             [                                                     ]
             [ [ DISTANCE=   from value,to value   ]               ]
```

RANGE

From one to three depth ranges or water layers may be code. The "S" or "B" option for each range indicates to the system whether you have specified a range relative to the bottom "B" or the surface "S" or a specific water layer (a numeric entry "layer code" - no repeats, no upper or lower limits to be requested). For water layer values the following codes are to be used:

1 = whole lake composite

2 = epilimnion

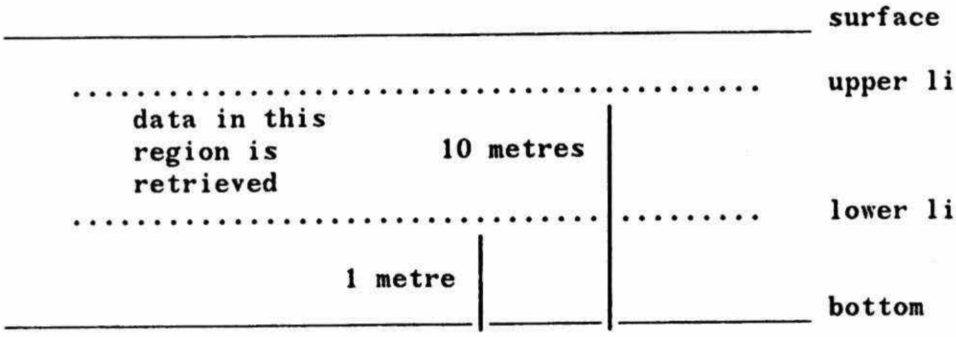
3 = metalimnion

4 = hypolimnion

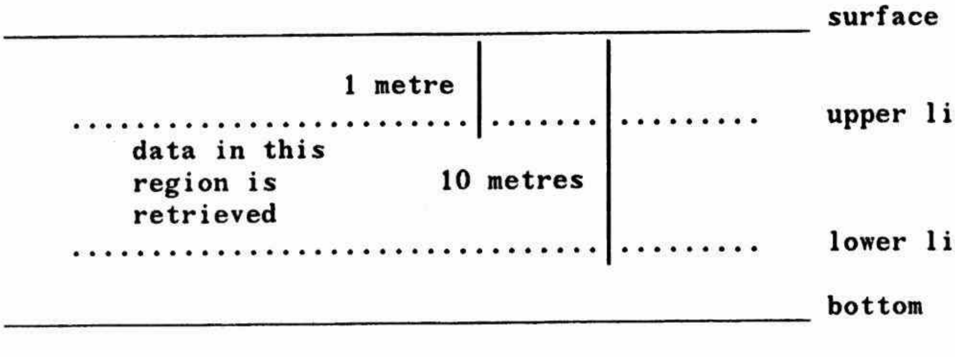
5 = euphotic zone

9 = general layer

For depth ranges, the upper limit always refers to the limit nearer the surface of the water. The lower limit is closer to the bottom. Thus, if you requested an upper limit of 10.00 metres and a lower limit of 1.00 metres from the bottom (S/B coded as "B") it would specify a depth range as follows:



A upper limit of 1.00 metres and a lower limit of 10.00 metres from the surface (S/B coded as "S") would specify a depth range like this:



Notice that in one case, the upper limit is the large number and in the other case, the lower limit is the larger one.

On the Parameter Summary Report, Depth Ranges 1,2 and 3 form three columns across the page.

System default is all depths. Maximum depth value is 999.99.

DISTANCE

There are two kinds of sampling stations, base stations and sub-stations. The location of base stations is defined by latitude and longitude. Sub-stations are defined by distance and bearing from a base station, or in some cases such as river ranges, where bearing is fixed for all sub-stations, by distance alone.

The distance parameter permits retrieval of data for a group of sub-stations depending on their distance from a base station. Define exact limits; for example, coding DIST FROM 0 TO 500" will retrieve data for those sub-stations within 500 metres of a base station (including the base station) and coding DIST FROM 500 TO 99999 will retrieve data for those sub-stations farther away from the base station than 500 metres.

Examples:

1) `DEPTH RANGE=S,95,10,RANGE=S,150.50,96`

2) `DEPTH DISTANCE=10,500`

3) `DEPTH RANGE=B,1,10,DISTANCE=5,25`

SAMPLE Keyword

Use the SAMPLE keyword to specify SIS sample type codes.

```
SAMPLE      value-1,value-2,.......,value-10
```

Up to 10 codes may be specified. Valid codes are found on the CDF Listing.

Examples:

1) `SAMPLE  011,012,041`

LISTYPE Keyword

Use the LISTYPE keyword to specify LIS sample type codes.

```
LISTYPE     value-1,value-2,.......,value-10
```

Up to 10 codes may be specified. Valid codes may be obtained from the Laboratory.

Examples:

```
1) LISTYPE  C,EF,GL,LE,SS
```

REGION Keyword

Use the REGION keyword to specify that all data for a specific region is to be retrieved. This keyword is used instead of the STATION Keyword.

```
REGION       value-1,value-2,.......,value-10
```

Up to 10 codes may be specified. Valid codes are found on the CDF Listing. Each value consists of the 2 sub-fields region and district. The region sub-field consists of 2 characters and the district sub-field 3 characters. Zero fill the region sub-field if the district is coded.

Data is retrieved for those stations for which a Region (district) value has been coded on the Station Description File.

Examples:

1) `REGION 1,2,3`

2) `REGION 03301,03311,06601`

CRITERIA Keyword

Use this keyword to specify the water use codes for which the Water Quality Criteria Reports will be produced.

```
CRITERIA  [CODE=value-1]  [,level-1,...]
```

Up to 8 codes may be specified. The sequence in which they are coded determines the position in which they are printed on the report.

Valid "values" are found on the CDF Listing.

The "level" code is used to specify the level at which sample result values are to be compared to criteria violation ranges. System default is 2. Valid codes are:

CODE		RIVER BASIN STATION ID	GREAT LAKES STATION ID	ALL OTHER ID FORMATS
6	start at	station type	station number	full station id
5		station number	station type	-
4		minor basin	sub-section	-
3		major basin	body of water	-
2		study level	study level	study level
1		program level	program level	program level

If no criteria violation range has been defined at the requested level, the system will automatically search the file for a range defined at the next higher level (decending code number).

Example:

1) `CRITERIA CODE=F1,2,CODE=R2,CODE=R3,5`

SEASON Keyword

When reports options CRITSTAT and CRITPARA are requested this keyword must be coded with at least one date range.

```
SEASON    [FROM=value-1a]  [,TO=value-1b,FROM=value2-a....]
```

The format is the same as that of the DATE keyword. The values specified must fall within the range specified by the first FROM value and the last TO value on the DATE keyword card.

There are two ways to code this field.

1) Sequential Time periods

Data retrieval by retrieval date range can be divided into four seasonal time periods by specifying numeric ranges.

		YY MM DD		YY MM DD
for example a Control date of - would select all data on file from january 1, 1964 to december 31, 1975 and		64 01 01	to	75 12 31
the seasonal date ranges of -	RANGE 1	64 01 01	to	66 12 31
	RANGE 2	67 01 01		68 12 31
	RANGE 3	69 01 01		69 12 31
	RANGE 4	70 01 01		75 12 31

would divide the data into 4 sequential time periods.

2) Seasonal Time Periods

This option is used when data selected by the retrieval date range is to be grouped by seasonal periods (e.g., spring, summer, fall winter). The user specifies the begin - end month and day for each range. The year fields are to be coded as "AA".

For example, if the control date specified above is used and the seasonal ranges are coded as:

RANGE 1 AA 01 31 to AA 06 30

RANGE 2 AA 07 01 to AA 08 31

RANGE 3 AA 09 01 to AA 10 31

RANGE 4 AA 11 01 to AA 12 31

the data for the years 1964 to 1975 would be grouped together in periods of january to june, july to august september to october and november to december.

UTM Keyword

Use the UTM keyword to specify up to two rectangular areas. Only those stations within these areas will be reported as long as the UTM co-ordinates of the stations within the area specified have been coded on the SDF File. This keyword is used instead of the STATION or REGION keywords.

```
UTM       ZONE=area-1,EAST=east-1,NORTH=north-1   (minimum)
          ZONE=area-1,EAST=east-2,NORTH=north-2   (maximum)

          ZONE=area-2,EAST=east-3,NORTH=north-3   (minimum)
          ZONE=area-2,EAST=east-4,NORTH=north-4   (maximum)
```

Each rectangular area consists of a minimum and maximum easting and northing value. Note that an area may not overlay a zone boundary; therefore, the zone numbers for both the minimum and maximum values must be the same for an area.

Examples:

```
a)  UTM ZONE=16,EAST=33687.0,NORTH=36817.5
        ZONE=16,EAST=34000.0,NORTH=68900

b)  UTM ZONE=16,EAST=2001.5,NORTH=3681.0
        ZONE=16,EAST=3011.5,NORTH=4000.0
        ZONE=17,EAST=1623.5,NORTH=2000
        ZONE=17,EAST=2100,NORTH=21561.5
```

FIELD075 Keyword

The FIELD075 keyword is used mainly by the Phtotoxicology Section of the Air Resources Branch to select data pertaining to the SIS sample type 075. Water Resource Fish Contaminants Program also uses this with a sample type code of 078.

```
FIELD075    [ SPECIES=value-1,value-2....value-25 ]

            [ SAMPTYPE=value-1,value-2...value-10 ]

            [ AREA=value-1,value-2...value-10 ]
```

SPECIES

From one to twenty-five species codes may be coded. When this parameter is coded, only those samples with the specified species code will be selected. Values coded may continue onto a second card.

SAMPTYPE

From one to ten phyto-sample types codes may be coded. When this parameter is coded, only those samples with the specified codes will be selected.

AREA

From one to ten area codes may be specified.

Examples:

a)
```
FIELD075 SPECIES=10,15,20,75,201,202,223,334,444
```

b)
```
FIELD075 SPECIES=222,5011,5300
         SAMPTYPE=01,21,22,31
         AREA=1,2,6,9
```

AGENCY Keyword

Use the AGENCY keyword to define the sampling agencies for which data is to be retrieved.

```
AGENCY     value-1,value-2......,value-10
```

Up to ten sampling agency codes may be specified. The code consists of 5 sub-fields, namely:

Ministry	- 2 characters
Division	- 2 characters
Branch	- 2 characters
Section	- 2 characters
Unit	- 2 characters

and corresponds to the code specified on the Laboratory Submission Sheet. When specifying a value, only code to the level required. Zero filling within each sub-field is required.

Examples:

a) `AGENCY   010102`

b) `AGENCY   0101,010301,0110,02`

DESCLOC Keyword

Use the DESCLOC keyword to have the Station Location Description which was entered on the LIS Analysis Sheet printed on the Station Detail Report. One line will appear on the report under the first 10 tests printed with the value.

```
DESCLOC
```

DESCSAMP Keyword

Use the DESCSAMP keyword to have the Sample Description which was entered on the LIS Analysis Sheet printed on the Station Detail Report. One line will appear on the report under the first 10 tests printed with the value.

```
DESCSAMP
```

NOSAMP Keyword

Use the NOSAMP keyword to suppress field sample type data from printing on the Station Detail Report. Usually one line is printed under the date-time line containing this information for composite, sediment and precipitation samples.

```
NOSAMP
```

After the output reports have been received, check through them to determine whether the run was successful. A request is successful when all the following conditions are met:

a. All messages requiring fix-up are absent from the Retrieval Control Report. If messages are present, a completion code of "999" will appear in the JCL listing.

b. The execution of each phase of processing for a particular request is reported on the Retrieval Control Report. If a phase has been executed, its "ENTER" and "EXIT" statements will appear.

c. the corresponding SIS reports (or files) requested have been produced.

Problems or questions which arise in the running of the data retrieval are to be directed to the Systems Development Section.

SYSTEM MESSAGES

TABLE OF CONTENTS

INTRODUCTION 900-10-1
  GENERAL 900-10-1

SAMPLE RESULTS MASTER FILE UPDATE MESSAGES 900-40-1

RETRIEVAL MESSAGES 900-60-1

TABLE OF CONTENTS

GENERAL

This chapter lists the messages which are printed on the update and retrieval reports. The chapter is divided into sections corresponding to the individual files and retrieval.

Where warranted, explanations for the messages are given.

Messages with a 'W' preceeding the message number are warning messages only and do not terminate processing.

SR0005	DUPLICATE SRM RECORD FOR STATION: "sssssss" DATE "dddddd" SAMPLE NO. "nnnnnnnn" Explanation: The system has found a duplicate record on the master file. The user must submit a SRM Update form specifying the above fields and a Trans code of "D". This will delete all occurances of the same record and produce the SRM turnaround form. The User must then review the forms and submit the correct record for keypunching.
SR0011	NEW TRANS = SRM KEY - TRANS REJECTED, STATION "sssssss" DATE "dddddd" SAMPLE NO. "nnnnnnnn" Explanation: User is attempting to add a new record to the master file. The system has found a record which has the same record key.
SR0020	STATION ID CHANGED FROM 'xxxxxxxxxxxxxxx'
SR0021	SAMPLE DATE CHANGED FROM 'xxxxxx'
SR0022	SAMPLE NUMBER CHANGED FROM 'xxxxxxxx'
SR0025	TEST NAME 'xxxxxx' FOR ANALYSIS METHOD 'xxxxxx' - DELETED AS REQUESTED
SR0026	TEST NAME 'xxxxxx' FOR ANALYSIS METHOD 'xxxxxx' NOT FOUND - DELETE IGNORGED
SR0027	MAXIMUM OF 300 BUCKETS EXCEEDED - TEST NAME 'xxxxxx' FOR ANALYSIS METHOD 'xxxxxx' NOT ADDED Explanation: Each SRM record can hold a maximum of 300 analytical (including field tests) values.
SR0028	TEST NAME 'xxxxxx' FOR ANALYSIS METHOD 'xxxxxx' ADDED TO RECORD
SR0030	SAMPLE TIME CHANGED FROM 'xxxx'
SR0031	SAMPLE DISTANCE CHANGED FROM 'xxxxx'
SR0032	SAMPLE DEPTH CHANGED FROM 'xxxxx'
SR0033	SAMPLE TYPE CHANGED FROM 'xxx'
SR0034	WATER LAYER CHANGED FROM 'x'
SR0035	WATER DEPTH CHANGED FROM 'xxxxx'

SR0036	BEAR FROM REF CHANGED FROM 'xxx'
SR0037	SUB PROJECT CHANGED FROM 'xx'
SR0038	PROJECT CHANGED FROM 'xx'
SR0039	SAMPLE AGENCY CHANGED FROM 'xxxxxxxxxx'
SR0041	FIELD DATA CODED ON TRANS TYPE J IGNORED BECAUSE SAMPLE TYPE IS 011
SR0044	SAMPLERS SURNAME CHANGED FROM "ssssssssssss"
SR0045	SUBMISSION NUMBER CHANGED FROM "sssssss"
SR0049 E	DATABASE NUMBER DEFINED FOR PGM-STUDY DOES NOT MATCH CONTROL CARD NUMBER
	Explanation: The Program/Study field on each transaction is checked against a control table to see which database file is to be used in the update. if this table value does not equal the value on the control card, the update is aborted. Check control card for correct value.
SR0050	STATION ID NOT ON SDF
	Explanation: The Station Id field is checked against the Station Description FIle for a Defined value for the specific program/study. User should check that correct Id was coded. Data for coded ID is not retrievable until the ID is defined on the SDF file.
SR0051E	SAMPLE DATE 'xxxxxx' IS NOT NUMERIC
SR0052E	SAMPLE DATE YEAR 'xx' IS NOT NUMERIC
SR0053E	SAMPLE DATE MONTH 'xx' IS INVALID
SR0054E	SAMPLE DATE DAY 'xx' IS INVALID
SR0055E	DISTANCE FORM SHORE 'xxxxx' IS NOT NUMERIC
SR0056E	SAMPLE TIME 'xxxx' IS NOT NUMERIC
SR0057E	SAMPLE TIME HOUR 'xx' IS INVALID

SR0058 SAMPLE DATE YEAR 'xx' IS GREATER THAN 1 YEAR OLD

Explanation: The Sample Date field was found to contain a value which is greater than 1 year old. This is a warning to users that the sample date field could contain a invalid date. Correct as soon as possible.

SR0059E SAMPLE DATE YEAR 'xx' IS INVALID

SR0060E	SAMPLE TIME MINUTE 'xx' IS INVALID
SR0060E	SAMPLE DEPTH 'xxxxx' IS NOT NUMERIC
SR0061	SAMPLE DEPTH VALUE 'xxxxx' TO BE LESS THAN WATER DEPTH VALUE 'xxxxx'
SR0062E	SAMPLE TYPE 'xxx' IS INVALID
SR0065E	COMPUTER DATE 'xxxxxx' IS NOT NUMERIC
	Explanation: Contact Systems Development - system problem
SR0066	SAMPLING AGENCY CODE 'xxxxx' IS NOT VALID OR MISSING
SR0067	ANALYSIS AGENCY CODE 'xxxxx' IS NOT VALID OR MISSING
SR0075	PROJECT CODE 'xx' IS NOT NUMERIC - SPACE INSERTED
SR0080	SUB PROJ CODE 'xx' IS NOT NUMERIC - SPACE INSERTED
SR0081	UTM ZONE 'xx' IS NOT NUMERIC
SR0082	UTM EASTING 'xxxxxxxx' IS NOT NUMERIC
SR0083	UTM NORTHING 'xxxxxxxx' IS NOT NUMERIC
SR0085	WATER DEPTH 'xxxxx' IS NOT NUMERIC - ZERO INSERTED
SR0085	BEARING FROM POINT 'xxxx' IS NOT NUMERIC - ZERO INSERTED
SR0090	COMPOSITE NO OF SAMPLES 'xx' IS INVALID OR MISSING - 01 INSERTED
SR0095	COMPOSITE DEPTH INTERVAL 'xxxxx' NOT NUMERIC
SR0100	COMPOSITE DEPTH INTERVAL MISSING FOR SAMPLE TYPE 012
SR0105	COMPOSITE TIME INTERVAL 'xxxx' NOT NUMERIC
SR0110	COMPOSITE TIME INTERVAL MISSING OR INVALID
SR0115	SAMPLE TYPE 'xxx' REQUIRES SAMPLE DEPTH VALUE 'xxxxx' TO BE > THAN WATER DEPTH VALUE 'xxxxx'
SR0125	INITIAL DATE YEAR 'xx' IS INVALID
SR0130	INITIAL DATE MONTH 'xx' IS INVALID
SR0135	INITIAL DATE DAY 'xx' IS INVALID

SR0140	INITIAL DATE TIME 'xxxx' IS INVALID
SR0145	INITIAL DATE TIME MINUTE 'xx' IS INVALID
SR0150	INITIAL DATE 'xxxxxx' IS NOT NUMERIC OR INVALID
SR0155	INITIAL DATE YEAR 'xx' IS > SAMPLE YEAR
SR0160	INITIAL DATE MONTH 'xx' IS > SAMPLE MONTH 'xx'
SR0170	INITIAL DATE DAY 'xx' IS > OR = SAMPLE DAY 'xx'
SR0175	TIME 'xxxx' IS > OR = SAMPLE TIME
SR0176	PREC GAUGE DEPTH VALUE 'xxxxx' ID MISSING OR INVALID - ZERO INSERTED
SR0177	PREC START TIME HOUR 'xx' IS INVALID
SR0178	PREC START TIME MIMUTE 'xx' IS INVALID
SR0179	PREC END TIME HOUR 'xx' IS INVALID
SR0180	PREC END TIME MINUTE 'xx' IS INVALID
SR0181	PREC END TIME > START TIME
SR0200	SEDIMENT FROM DEPTH 'xxxxx' IS NOT NUMERIC
SR0205	SEDIMENT TO DEPTH 'xxxxx' IS NOT NUMERIC
SR0210	SEDIMENT FROM DEPTH 'xxxxx' > THAN TO DEPTH 'xxxxx'
SR0211	LOW VOL FLOW VOLUME 'xxxxxx' IS NOT NUMERIC-ZERO INSERTED
SR0250	TIME PRECISSION VALUE 'x' IS NOT NUMERIC - ZERO INSERTED
SR0300	SAMPLE STATUS VALUE 'x' IS INVALID
	Explanation: Contact Systems Development - system problem
SR0320	WATER LAYER CODE IS NOT VALID
SR0360	MINISTRY REGION 'xx' IS NOT INVALID - SPACE INSERTED
SR0362	MUNICIPAL CODE 'xxxxx' IS INVALID - SPACE INSERTED
SR0400E	RESULT COUNT VALUE 'xx' IS INVALID

	Explanation: Contact Systems Development - system problem
SR0401	REMARK CODE CHANGED FROM “rr” FOR TEST NAME “tttttt”
SR0402	UNIT CODE CHANGED FROM “uu” FOR TEST NAME “tttttt”
SR0403	SCALE CODE CHANGED FROM “ss” FOR TEST NAME “tttttt”
SR0404	RESULT VALUE CHANGED FROM “vvv” FOR TEST NAME “tttttt”
SR0405	TEST NAME CODE 'xxxxxx' NOT DEFINED ON CDF - CONTACT SYSTEMS Explanation: The test name specified is invalid or it is a valid value but has not been defined on the Code Description File. The system will store the value but the value is non-retrievable until the test name has been defined. Please accumulate a list of these errors and submit on a bi-monthly basis to Systems.
SR0410	UNIT CODE 'xxx' NOT NUMERIC FOR TEST NAME 'xxxxxx' - TEST DELETED
SR0415	UNIT CODE 'xxx' NOT DEFINED ON CDF FOR TEST NAME 'xxxxxx' Explanation: The unit code specified is invalid or it is a valid value but has not been defined on the Code Description File. IF valid contact systems.
SR0420	SCALE CODE 'xxx' NOT NUMERIC FOR TEST NAME 'xxxxxx' - TEST DELETED
SR0425	SCALE CODE 'xxx' NOT DEFINED ON CDF FOR TEST NAME 'xxxxx' Explanation: The scale code specified is invalid or it is a valid value but has not been defined on the Code Description File. IF valid contact systems.
SR0426	NEGATIVE RESULT VALUE FOUND FOR TEST NAME 'xxxxxx'
SR0430	RESULT VALUE 'xxxxxxx' IS NOT NUMERIC FOR TEST NAME 'xxxx' - TEST DELETED Explanation: IF a alpha-numeric value is to be stored the user must code a 'A' in the ALPHA field on the SRM update Form.
SR0435	RESULT VALUE EXPONENT 'x' FOR TEST NAME 'xxxxxx' IS NOT VALID - TEST DELETED

SR0460E NO ANALYSIS RESULTS FOR THIS RECORD

Explanation: There must be at least 1 test name with a valid value before a record is stored on the SRM.

SR0475 REMARK CODE 'xxx' IS NOT NUMERIC FOR TEST NAME 'xxxxxx'
- ZERO INSERTED

Explanation: Presently the SIS stores a numeric remark code. Specific LIS remark codes are converted to a numeric SIS version. When coding changes on the SRM update form the numeric version must be used. Valid codes are found on the CDF listing.

SR0480 REMARK CODE 'xxx' NOT VALID FOR TEST NAME 'xxxxxx'
- ZERO INSERTED

Explanation: SEE MESSAGE SR0475

SR0485 NO RESULT VALUE PRESENT FOR TEST NAME 'xxxxxx'
- BUCKET DELETED

SR0520E STATION ID 'xxxxxx' HAS MORE THAN 'xx' CHARACTERS

Explanation: For each program/study a specific format has been defined for the Station ID number. This message specifies that the Identifer specified contained more than the expected number of characters defined for the program/study.

SR0525E STATION ID 'xxxxxx' IS NOT NUMERIC

SR0526E STATION ID 'xxxxxx' DOES NOT CONFORM TO APPROPRIATE FORMAT

SR0560E CONTROL CARD FILE-ID 'xxx' NOT DEFINED ON CDF
- CONTACT SYSTEMS

SR0562E CONTROL CARD PROGRAM/STUDY 'xxxxx' NOT DEFINED ON CDF
- CONTACT SYSTEMS

SR0600E UNIT OF MEASURE HEADER RECORD NOT DEFINED ON CDF
- CONTACT SYSTEMS

SR0602E SAMPLE TYPE HEADER RECORD NOT DEFINED ON CDF
- CONTACT SYSTEMS

SR0605E REMARK CODE HEADER RECORD NOT DEFINED ON CDF
- CONTACT SYSTEMS

SR0610E TEST NAME HEADER RECORD NOT DEFINED ON CDF

- CONTACT SYSTEMS

SR0700	DUPLICATE TYPE A,C, OR D CARD - SET REJECTED
SR0701	DUPLICATE TYPE G CARD - SET REJECTED
SR0702	DUPLICATE TYPE I CARD - SET REJECTED
SR0703	DUPLICATE TYPE J CARD - SET REJECTED
SR0704	DUPLICATE TYPE R OR T CARD - SET REJECTED
SR0710	DUPLICATE TYPE P CARD FOR TEST NAME 'xxxxxx' - CHECK LISTING FOR STORED VALUE
SR0715	INVALID TRANS TYPE SPECIFIED - SET REJECTED
SR0720	MAXIMUM 300 PARAMETERS ALLOWED, PARAMETER 'xxxx' REJECTED
SR0730E	SAMPLE DATE 'xxxxxx' NOT NUMERIC
SR0740E	SAMPLE DATE MONTH IS INVALID - SET REJECTED
SR0750E	SAMPLE DATE DAY 'xx' IS INVALID - SET REJECTED
SR0660E	SAMPLE NUMBER IS TO BE BLANK FOR T TYPE TRANSACTION - SET REJECTED
SR0765E	SAMPLE HOUR 'xx' IS INVALID - SET REJECTED
SR0770E	SAMPLE MIMUTE 'xx' IS INVALID
SR0775E	SAMPLE DEPTH 'xxxxx' IS INVALID
SR0800E	REPLACEMENT SAMPLE DATE 'xxxxxx' IS NOT NUMERIC - SET REJECTED
SR0805E	REPLACEMENT SAMPLE DATE YEAR 'xx' IS INVALID - SET REJECTED
SR0810E	REPLACEMENT SAMPLE DATE MONTH 'xx' IS INVALID - SET REJECTED
SR0815E	REPLACEMENT SAMPLE DATE DAY 'xx' IS INVALID - SET REJECTED
SR0900	TEST NAME CODE 'xxxxxx' NOT ON CDF - SET REJECTED
SR0910E	MAXIMUM NUMBER OF ADD RECORDS = 'xxxxx' EXCEEDED

	- SET REJECTED
SR0915E	MAXIMUM NUMBER OF CHANGE RECORDS = 'xxxxx' EXCEEDED - SET REJECTED
SR0950	CHANGE TO RECORD SEQUENCE FIELDS NOT ALLOWED FOR INTERIM RECORDS
SR0951	LIS SUBMISSION NO "xxxxxx" NOT SAME AS SRM SUBMISSION NO "xxxxxxxx".

RT0100 KEYWORD IS MISSING OR DOES NOT START IN COLUMN 1

Explanation: program is expecting Keywords to start in column 1 of control card. Also, ensure that the control cards are numbered sequentially in columns 73-80.

RT0102 UNDEFINED KEYWORD OR KEYWORD MISSING

Explanation: program is expecting Keywords to start in column 1 of control card. Ensure that specified keywords and parameters are spelled correclty.

RT0104 MAX. OF 10 PROGRAM CODES ALLOWED

RT0106 MAX. OF 5 HEADINGS EXCEEDED - FIRST 5 ACCEPTED

Explanation: User specified more than the 5 line limit for headings. The system will accept the first five lines specified and processing will continue.

RT0108 MAX. OF 2 REPORT HEADINGS EXCEEDED - FIRST 2 ACCEPTED

Explanation: User specified more than the 2 line limit for titles. The system will accept the first two lines specified and processing will continue.

RT0110 MAX. OF 4 DATE RANGES EXCEEDED

Explanation: User specified more than the 4 ranges allowed.

RT0112 UNDEFINED OPTION: xxxxxxxx

Explanation: The system found a option specified on the OPTION card which has not been defined to the system. Check for the correct spelling.

RT0114 MAX. OF 200 STATIONS IDS EXCEEDED

Explanation: A maximum of 200 control cards with single stations or station ranges were specified.

RT0116 STATION OPERAND IS MISSING ON CARD

Explanation: The system is expecting to find at least one Station keyword control card with either ALL, ID, BASIN or BOW specified. See writup for STATION Keyword.

RT0118 INVALID OPERAND VALUE ON STATION CARD

Explanation: Refer to the writup on the STATION keyword for correct operands (e.g. BASIN, STREAM, NUM etc.).

RT0120 INVALID BASIN VALUE ON CARD

Explanation: The River Basin station ID format or the Great lakes station ID format has been selected, but the BASIN (BOW) operand conflicts with another operand on the same card or the preceding card. Ensure that the operands are specified in the correct sequence.

RT0122 MAX. OF 4 CHARACTERS EXCEEDED FOR BASIN VALUE

Explanation: The River Basin station ID format or the Great lakes station ID format has been selected, but the BASIN (BOW) operand exceeds the maximum four characters.

RT0123 INVALID STREAM VALUE ON CARD

Explanation: The River Basin station ID format or the Great lakes station ID format has been selected, but the STREAM (SUBSEC) operand contains a invalid value

RT0124 MAX. OF 4 CHARACTERS EXCEEDED FOR STREAM VALUE

Explanation: The River Basin station ID format or the Great lakes station ID format has been selected, but the STREAM (SUBSEC) operand exceeds the maximum of four characters.

RT0126 MAX. OF 4 CHARACTERS EXCEEDED FOR STATION NUMBER

Explanation: The River Basin station ID format or the Great lakes station ID format has been selected, but the STATION operand exceeds the maximum of four characters.

RT0128 INVALID STN NUMBER VALUE

Explanation: The River Basin station ID format or the Great lakes station ID format has been selected, but the station number operand contains an invalid value.

RT0128 INVALID STN TYPE VALUE ON CARD

Explanation: The River Basin station ID format or the Great lakes station ID format has been selected, but the station TYPE operand is invalid.

RT0130 MAX. OF 2 CHARACTERS EXCEEDED FOR STATION TYPE VALUE

Explanation: The River Basin station ID format or the Great lakes station ID format has been selected, but the station TYPE operand exceeds the maximum of two characters.

RT0150 MAX. OF 300 TESTS EXCEEDED

Explanation: User may specify up to a maximum of 200 tests (parameters) in any one retrieval.

RT0152 TEST OPERAND IS MISSING ON CARD

Explanation: User has probably coded the operand (e.g., UNIT, MAX, etc.) incorrectly.

RT0154 INVALID TEST MINIMUM VALUE

RT0156 INVALID TEST MAXIMUM VALUE

RT0158 INVALID TEST METHOD CODE

RT0160 INVALID TEST UNIT CODE

Explanation: The unit part of the Unit of measure code specified contains more than three characters

RT0162 INVALID TEST SCALE CODE

Explanation: The scale part of the Unit of measure code specified contains more than three characters

RT0164 INVALID TEST UNIT-SCALE CODE

Explanation: The unit or scale value coded contains an invalid value.

RT0166 TEST MIN NO. SAMPLES EXCEEDS 6 DIGITS

RT0168 INVALID TEST MIN NO. SAMPLES

RT0175 TEST CRITERIA LEVEL EXCEEDS 1 DIGIT

RT0176 INVALID TEST CRITERIA LEVEL VALUE

RT0180 MAX. NUMBER OF 4 SEASONS EXCEEDED

RT0184	MAX. NUMBER OF 8 CRITERIA CODES EXCEEDED
RT0186	OPERAND IS MISSING FOR CRITERIA CODE
RT0190	MAX. NUMBER OF 3 DEPTH RANGES EXCEEDED
RT0192	INVALID VALUE FOR DEPTH RANGE
RT0194	INVALID DISTANCE VALUE
RT0196	NO OPERAND FOUND FOR DEPTH KEYWORD Explanation: program expecting RANGE or DISTANCE operand, but none found
RT0200	MAX. NUMBER OF 10 SIS SAMPLE TYPES EXCEEDED
RT0202	SIS SAMP TYPE EXCEEDS 3 CHARACTERS
RT0205	MAX. NUMBER OF 10 LIS SAMPLE TYPES EXCEEDED
RT0206	LIS SAMP TYPE EXCEEDS 2 CHARACTERS
RT0210	INVALID UTM - MORE THAN 4 CO-ORDINATES SPECIFIED
RT0212	NO OPERANDS SPECIFIED FOR UTM Explanation: program expecting ZONE, EAST OR NORTH operands, but none found
RT0220	MAX. NUMBER OF 10 REGN/DISTRICTS EXCEEDED
RT0230	MAX. OF 10 SAMPLING AGENCY CODES ALLOWED
RT0236	FIELD075 OPERAND IS MISSING ON CARD
RT0238	MAX. OF 25 SPECIES VALUES EXCEEDED
RT0240	MAX. OF 4 CHARACTERS EXCEEDED FOR SPECIES VALUE
RT0242	MAX. OF 10 SAMPLE TYPE VALUES EXCEEDED
RT0244	MAX. OF 2 CHARACTERS EXCEEDED FOR SAMPLE TYPE
RT0246	MAX. OF 10 AREA CODE VALUES EXCEEDED
RT0248	MAX. OF 1 CHARACTER EXCEEDED FOR AREA CODE
RT0250	MAX. OF 10 INTEGER DIGITS EXCEEDED OR INVALID CHARACTER

FOUND

Explanation: When coding a numeric value for the MAX or MIN operand on the TEST card (could apply to other cards) a maxumum of 10 integer digits was exceeded - use the exponent

RT0252 NON NUMERIC VALUE FOUND

Explanation: When coding a numeric value for the MAX or MIN operand on the TEST card (could apply to other cards) a non-numeric character was found

RT0254 MAX. OF 4 DECIMAL DIGITS EXCEEDED OR INVALID CHARACTER FOUND

Explanation: When coding a numeric value for the MAX or MIN operand on the TEST card (could apply to other cards) a maxumum of 4 decimal digits was exceeded - use the exponent

RT0256 EXPONENT VALUE NOT NUMERIC

Explanation: When coding a numeric value for the MAX or MIN operand on the TEST card (could apply to other cards) the exponent was coded, but the value specified was non-numeric

RT0300 PROGRAM CODE IS MISSING

Explanation: PROGRAM keyword is mandatory

RT0302 CONTROL DATE IS MISSING

Explanation: DATE keyword is mandatory

RT0304 NO OPTIONS SPECIFIED

Explanation: OPTION keyword is mandatory

RT0306 NO TESTS SPECIFIED

Explanation: TEST keyword is mandatory

RT0310 DISTANCE FROM > DISTANCE TO

RT0320 *** USER NOT AUTHORIZED TO USE SIS SYSTEM ***
(IGNORE FOR ONLINE RETRIEVAL EDIT)

Explanation: All SIS users must be defined to the system

	to allow them access. IF the user is performing the online VERIFY option ignore this message; otherwise, contact Systems
RT0324	PROGRAM CODES NOT IN ASCENDING SEQUENCE Explanation: The values specified for the PROGRAM keyword must be coded in ascending sequence
RT0326	CDF RECORD IS MISSING FOR PROGRAM - CONTACT SYSTEMS DEVELOPMENT Explanation: The program (PP) part of the Program/Study is not defined on the Code Description File (CDF) - or the user coded the value incorrectly
RT0328	CDF RECORD IS MISSING FOR PGM-STUDY - CONTACT SYSTEMS DEVELOPMENT Explanation: The study (SSS) part of the Program/Study is not defined on the Code Description File (CDF) - or the user coded the value incorrectly
RT0330	INVALID DATE - FROM YEAR
RT0332	INVALID DATE - FROM MONTH
RT0334	INVALID DATE - FROM DAY
RT0336	DATES NOT IN ASCENDING SEQUENCE
RT0338	INVALID DATE - TO YEAR
RT0340	INVALID DATE - TO MONTH
RT0342	INVALID DATE - TO DAY Explanation: The study (SSS) part of the Program/Study is not defined on the Code Description File (CDF) -
RT0349	NO OPTIONS SPECIFIED
RT0350	STN SUMMRY & STN DETAIL REPORTS REQUESTED Explanation: Only one or the other can be specified in any one retrieval
RT0352	STN SUMMRY & STN DETAIL REPORTS REQUESTED WITH PUBLICATION REPORT

	Explanation: Only one or the other can be specified in any one retrieval
RT0354	DATA COMPRESS REQUEST - NO REPORTS WITH PUBLICATION REPORT
RT0355	ONLY ONE SPSS FILE ALLOWED
RT0356	ONLY 20 TESTS ALLOWED WITH SPSS20 FILE
RT0358	ONLY 40 TESTS ALLOWED WITH SPSS40 FILE
RT0360	STATION DATA COMPRESS OPTION NOT ALLOWED WITH SPSS OPTION
RT0362	HIS FLOW OPTION xxx IS INVALID
RT0364	CRITERIA REPORT OPTION REQUESTED BUT NO CRITERIA CODES SPECIFIED
RT0366	PARAMETER SUMMARY REPORT REQUESTED - DEPTH KEYWORD MISSING
RT0370	STN ID TO xxxxx IS < STN FROM xxxxx
	Explanation: Station range has been specified using the ID format but the TO value is less than the FROM value
RT0372	INVALID STN NUMBER TO VALUE
	Explanation: Expecting numeric station number
RT0376	INVALID STN STREAM VALUE
RT0378	INVALID STN BASIN VALUE
RT0380	INVALID STN SUBSEC VALUE
RT0382	INVALID STN BOW VALUE
RT0390	TEST NAME xxxxxx IS NOT DEFINED ON CDF
	Explanation: The test name specified has not been defined on the Code Description File (CDF). Check for correct coding. If value specified is correct contact Systems Development
RT0392	DUPLICATE TEST AND METHOD CODE SPECIFIED FOR TEST xxxxxx
	Explanation: When specifying test names, each test must be unique. If there are different analytical methods under which the data is stored, then specify the test

name and method code.

RT0394	DUPLICATE TEST NAME SPECIFIED - METHOD CODE IS REQUIRED FOR TEST xxxxxx Explanation: When specifying test names, each test must be unique. If there are different analytical methods under which the data is stored, then specify the test
RT0396	DEFAULT UNIT xxxxxx NOT ON CDF Explanation: System problem - the default UNIT for the test name has not been defined on the CDF - Contact Systems Development
RT0398	UNIT SPECIFIED xxxxxx NOT ON CDF Explanation: User specified UNIT value has not been defined on the CDF
RT0400	DEFAULT SCALE xxxxxx NOT ON CDF Explanation: System problem - the default SCALE for the test name has not been defined on the CDF - Contact Systems Development
RT0402	SCALE SPECIFIED xxxxxx NOT ON CDF Explanation: User specified SCALE value has not been defined on the CDF
RT0410	UNDEFINED CONVERSION FACTOR FOR DEFAULT UNITS xxxxxx TO xxxxxx : TEST = xxxxxx
RT0414	TEST CRIT LEVEL = 3, NO MIN OR MAX VALUE CODED
RT0420	INVALID SEASON - FROM YEAR = xx
RT0422	INVALID SEASON - FROM MONTH = xx
RT0424	INVALID SEASON - FROM DAY = xx
RT0426	DATES NOT IN ASCENDING SEQUENCE (Season Dates)
RT0428	INVALID SEASON - TO YEAR = xx
RT0430	INVALID SEASON - TO MONTH = xx
RT0432	INVALID SEASON - TO DAY = xx

RT0440	INVALID CRITERIA USE CODE xx SPECIFIED
RT0444	DEPTH WATER LAYER SPECIFIED - DEPTH RANGES TO REMAIN BLANK
RT0446	INVALID DEPTH WATER LAYER SPECIFIED
RT0448	INVALID DEPTH S/B CODE - VALUE xxxxx
RT0450	BOTH LOWER AND UPPER DEPTH LIMITS REQUIRED FOR RANGE
RT0452	INVALID DEPTH RANGE FROM SURFACE - UPPER LIMIT > LOWER LIMIT
RT0454	INVALID DEPTH RANGE FROM BOTTOM - UPPER LIMIT < LOWER LIMIT
RT0460	SAMPLE TYPE NOT NUMERIC
RT0462	SAMPLE TYPE IS INVALID
RT0470	UTM ZONE VALUES NOT EQUAL FOR SAME AREA
RT0472	UTM MAX EASTING NOT > MIN EASTING
RT0474	UTM MAX NORTH NOT > MIN NORTH
RT0476	UTM ZONE VALUE < 15 OR > 18
RT0480	REGION OR REGION/DISTRICT xxxxx CODE INVALID
RT0500	NO STATION ID OR RECION OR UTM SPECIFIED
RT0900	REQUEST CARD SORT ABORTED
RT1000W	NON-NUMERIC RESULT FOUND FOR TEST: xxxxxx METHOD: xxxxxx FOR STATION ID: xxxxxx DATE: xxxxxx SAMP NO: xxxxxxxx - TEST REJECTED FOR RECORD This is an informative message - processing continues
RT1002W	UNIT CONVERSION NOT DEFINED FOR xxxxxx TO xxxxxx : TEST = xxxxxx FOR STATION ID: xxxxxx DATE: xxxxxx SAMP NO: xxxxxxxx - TEST REJECTED FOR RECORD Explanation: Conversion factor has not been defined for the default unit of measure value (FOR) to the user specified unit of measure (TO) This is an informative message - processing continues

```
RT1004W   UNIT CONVERSION NOT SPECIFIED AND SRM UNIT xxxxxx
          NOT = CDF DEFAULT xxxxxx FOR TEST xxxxxx
          FOR STATION ID: xxxxxx DATE: xxxxxx SAMP NO: xxxxxxxx -
          TEST REJECTED FOR RECORD
```

Explanation: SRM values have a different unit of measure than the default value for the specified test name. The user did not specify any UNIT value for the test name upon retrieval; therefore; the system will try to convert the SRM value to the default unit of measure. In doing so the system could not find a defined conversion factor. If the you want the SRM unit of measure retrieved, specify the SRM unit of measure for the test name.

This is an informative message - processing continues

```
RT1005    SRM SEQ ERROR: CURRENT = 'xxxxxxxxxxxxxxxxxx'
                            PREV = 'xxxxxxxxxxxxxxxxxx'
```

Explanation: A sequence error occurred in the reading of the Master File. If both the CURRENT and PREVIOUS values printed are exactly the same (duplicate record on the file) a SRM update has to be done to delete the records. Fill a Change form as described in the USER PROCEDURES Section to delete a SRM record. Only one form has to be filled in an the system will delete all occurances of the record.

```
RT1005A   DUPLICATE SEM RECORD FOR STATION “sssssssss”
          DATE: “dddddd” SAMPLE NO: “nnnnnnn”
```

Explanation: See message RT1005

```
RT1006    SDF MASTER SEQ ERROR: COUNT = xxxxxx Current = 'xxxx'
                                   PREV = 'xxxxxxxxx'
```

Explanation: A sequence error occurred in the reading of the SDF Master File. Contact Systems Development.

```
RT1007    SDF SELECT SEQ ERROR: COUNT = xxxxxx Current = 'xxxx'
                                   PREV = 'xxxxxxxxx'
```

Explanation: A sequence error occurred in the reading of the Selected SDF File. Contact Systems Development.

```
RT1008W   NO SRM RECORDS FOR STATION ID: “sssssss”
```

RT1010	NO DATA ON SRM FILE AS REQUESTED
	Explanation: The system could not find any data on the SRM file which met the selection criteria. Ensure that you are selecting data from the correct master file (i.e. Current, Historical or archive).
RT1011W	NO DATA FOUND AS REQUESTED FOR TEST NAME 'xxxxxx'
	Explanation: The system could not find any data on the SRM file for the specified test name within the selection criteria.

APPENDIX A

TABLE OF CONTENTS

FILE FORMATS A-10-1

STATION DESCRIPTION FILE A-10-1
STATION SUPPLEMENTARY FILE A-20-1
SAMPLE RESULTS MASTER FILE A-30-1
SPSS 20 OR 40 BUCKET FILE A-40-1
FILE132 OR FILE132A File A-50-1

APPENDIX A

TABLE OF CONTENTS

STATION DESCRIPTION FILE

FILE CHARACTERISTICS:
Recording Mode: Fixed - Blocked
Record Size: 1300 characters
Organ. Type: Physical sequential

NOTE: PICTURE Column which has a "*" preceeding it could contain spaces.

GROUP NAME/ SUB-GROUP/ FIELD NAME	OFFSET POSITION		FIELD LENGTH	PICTURE
FILE-ID				
System-ID	1	"SIS"	3	PIC X(3)
File-No	4	"05"	2	PIC X(2)
SEQUENCE-KEY				
Program-Study	6		5	PIC X(5)
Station-ID	11		20	PIC X(20)
SECONDARY-STATION-CODES				
System-ID-1	31		2	PIC X(2)
Station-ID-1			20	PIC X(20)
System-ID-2			2	PIC X(2)
Station-ID-2			20	PIC X(20)
System-ID-3			2	PIC X(2)
Station-ID-3			20	PIC X(20)
System-ID-4			2	PIC X(2)
Station-ID-4			20	PIC X(20)
System-ID-5			2	PIC X(2)
Station-ID-5			20	PIC X(20)
Lis-Station-Group	141		2	PIC X(2)
LIS-TEST-GROUPS				
Group-1	143		6	PIC X(6)
Group-2			6	PIC X(6)
Group-3			6	PIC X(6)
Group-4			6	PIC X(6)
Group-5			6	PIC X(6)
SAMPLING-AGENCY				
Ministry	173		2	PIC X(2)
Division			2	PIC X(2)
Branch			2	PIC X(2)
Section			2	PIC X(2)
Unit			2	PIC X(2)

GROUP NAME/ SUB-GROUP/ FIELD NAME	OFFSET POSITION	FIELD LENGTH	PICTURE
UTM-COORDINATES			
Zone	183	2	PIC X(2)
Easting		8	* PIC 9(7)V9
Northing		8	* PIC 9(7)V9
Precision		1	PIC X
GEOGRAPHICAL-COORDINATES			
Latitude	203	8	PIC X(8)
Longitude	211	9	PIC X(9)
Precision	220	1	PIC X
Region-Code	221	2	PIC X(2)
District-Code	224	3	PIC X(3)
MUNICIPALITY			
Municipality-Code	227	5	PIC X(5)
Concession		7	PIC X(7)
Lot		3	PIC X(3)
Electorical-District	242	3	PIC X(3)
HIS-STATIONS-FOR-FLOW-CONVERSION			
Station-A	245	7	PIC X(7)
Station-B		7	PIC X(7)
Station-C		7	PIC X(7)
Station-D		7	PIC X(7)
Station-E		7	PIC X(7)
Station-F		7	PIC X(7)
HIS-Conversion-Formula	287	50	PIC X(50)
HYDROLOGIC-CODE			
No-Levels	337	2	PIC X(2)
Reference	339	10	PIC X(10)
Major-Basin	349	2	* PIC 9(2)
Minor-Basin	351	3	* PIC 9(3)
Distance	354	7	* PIC 9(4)V999
Stream	361	4	* PIC 9(4)
LEVEL-2			
Distance	365	7	* PIC 9(4)V999
Stream	372	4	* PIC 9(4)
Level-3-TO-15	376	140	PIC X(140)
Confidential-Data-SW	516	1	PIC X
Set-Up-Date (YYMMDD)	517	6	PIC 9(6)
Termination-Date	524	6	PIC 9(6)

GROUP NAME/ SUB-GROUP/ FIELD NAME	OFFSET POSITION	FIELD LENGTH	PICTURE
DESCRIPTIONS			
Bow-Site	529	40	PIC X(40)
Sample-Point-Part1	569	40	PIC X(40)
Sample-Point-Part2	609	40	PIC X(40)
Station-Type	649	40	PIC X(40)
Plant	689	40	PIC X(40)
Municipality	729	40	PIC X(40)
Major-Basin	769	40	PIC X(40)
Minor-Basin	809	40	PIC X(40)
Terminal-Stream	849	40	PIC X(40)
UTILITY-DATA			
Util-Works-Type	889	2	PIC X(2)
Util-Oper-Auth	891	2	PIC X(2)
Util-Treat-Type-Mjr			
Util-Type-Mjr1	893	3	PIC X(3)
Util-Type-Mjr2	896	3	PIC X(3)
Util-Type-Mjr3	899	3	PIC X(3)
Util-Treat-Type-Min			
Util-Type-Min1	903	3	PIC X(3)
Util-Type-Min2	905	3	PIC X(3)
Util-Type-Min3	908	3	PIC X(3)
Util-Type-Min4	911	3	PIC X(3)
Util-Type-Min5	914	3	PIC X(3)
Util-Type-Min6	917	3	PIC X(3)
Util-Type-Min7	920	3	PIC X(3)
Util-Type-Min8	923	3	PIC X(3)
Util-Type-Min9	926	3	PIC X(3)
User-Defined-Data	929	50	PIC X(50)
Filler	979	19	PIC X(19)
Result-Area-Counter	998	2	PIC 9(2)
RESULT-AREA (occurs 10 times)			
Test-Name	1000	6	PIC X(6)
UNIT-OF-MEASURE			
Unit-Code		3	* PIC 9(3)
Scale-Code		3	* PIC 9(3)
Remark-Code		3	* PIC 9(3)
Filler		1	PIC X
Alphabetic-Result-SW		1	PIC X
Number-Of-Decimals		1	* PIC 9
Result-Value		12	* PIC -9999V999E+99

STATION SUPPLEMENTARY FILE

FILE CHARACTERISTICS:

Recording Mode:	Fixed - Blocked
Record Size:	500 characters
Organ. Type:	Physical sequential

GROUP NAME/ SUB-GROUP/ FIELD NAME	OFFSET POSITION		FIELD LENGTH	PICTURE
FILE-ID				
System-ID	1	“SIS”	3	PIC X(3)
File-No	4	“08”	2	PIC X(2)
SEQUENCE-KEY				
Program-Study	6		5	PIC X(5)
Level	11		1	PIC X
Station-ID	12		20	PIC X(20)
Test-Code	32		6	PIC X(6)
Record-Code	38		1	PIC X
Record-Sub-Code	39		1	PIC X
Last-Update (YYMMDD)	40		6	PIC X(6)
RANGE-1				
SPRING				
Minimum-Value	54		12	PIC X(12)
Switch			1	PIC X
Maximum-Value			12	PIC X(12)
SUMMER				
Minimum-Value			12	PIC X(12)
Switch			1	PIC X
Maximum-Value			12	PIC X(12)
FALL				
Minimum-Value			12	PIC X(12)
Switch			1	PIC X
Maximum-Value			12	PIC X(12)
WINTER				
Minimum-Value			12	PIC X(12)
Switch			1	PIC X
Maximum-Value			12	PIC X(12)

GROUP NAME/ SUB-GROUP/ FIELD NAME	OFFSET POSITION	FIELD LENGTH	PICTURE
RANGE-2			
SPRING			
Minimum-Value	146	12	PIC X(12)
Switch		1	PIC X
Maximum-Value		12	PIC X(12)
SUMMER			
Minimum-Value		12	PIC X(12)
Switch		1	PIC X
Maximum-Value		12	PIC X(12)
FALL			
Minimum-Value		12	PIC X(12)
Switch		1	PIC X
Maximum-Value		12	PIC X(12)
WINTER			
Minimum-Value		12	PIC X(12)
Switch		1	PIC X
Maximum-Value		12	PIC X(12)
Filler	246	254	PIC X(254)

NOTE: Each minimum and maximum has the format -9999v999E+99

SAMPLE RESULTS MASTER FILE

FILE CHARACTERISTICS:

Recording Mode:	Variable - Blocked
Record Size:	1000 To 11500 characters (each bucket area contains 35 characters)
Organ. Type:	Physical sequential

NOTE: PICTURE Column which has a "*" preceeding it could contain spaces.

GROUP NAME/ SUB-GROUP/ FIELD NAME	OFFSET POSITION	FIELD LENGTH	PICTURE
FILE-ID			
System-ID	1 "SIS"	3	PIC X(3)
File-No	4 "10"	2	PIC X(2)
SEQUENCE-KEY			
Program-Study	6	5	PIC X(5)
Station-ID	11	20	PIC X(20)
Filler	31	2	PIC X(2)
Sample-Date (YYMMDD)	33	6	PIC 9(6)
Sample-Distance	39	5	PIC 9(5)
Sample-Time (ZHHMM)	44	5	PIC 9(5)
Sample-Depth	49	5	PIC 9(3)V99
Sample-Type	54	3	PIC 9(3)
Sample-Number (field)	57	8	PIC X(8)
OTHER-FIELDS			
Record-Type	65	2	PIC X(2)
Record-Status	67	1	PIC X(1)
Date-Record-Added	68	6	PIC X(6)
Date-Record-Changed	74	6	PIC X(6)
Project-SubProject	80	4	PIC X(4)
SAMPLING-AGENCY			
Ministry	84	2	PIC X(2)
Division		2	PIC X(2)
Branch		2	PIC X(2)
Section		2	PIC X(2)
Unit		2	PIC X(2)
ANALYSIS-AGENCY			
Ministry	94	2	PIC X(2)
Division		2	PIC X(2)
Branch		2	PIC X(2)
Section		2	PIC X(2)
Unit		2	PIC X(2)

GROUP NAME/ SUB-GROUP/ FIELD NAME	OFFSET POSITION	FIELD LENGTH	PICTURE
Lis-Sample-Type	104	2	PIC X(2)
Lis-Field-Type	106	2	PIC X(2)
LIS-APPROVAL			
Lis-Approval-1	108	5	PIC X(5)
Lis-Approval-2		5	PIC X(5)
Lis-Approval-3		5	PIC X(5)
Lis-Approval-4		5	PIC X(5)
Lis-Approval-5		5	PIC X(5)
Lis-Approval-6		5	PIC X(5)
LIS-SAMPLE-NUMBERS			
Lis-Sample-No-1	138	8	PIC X(8)
Lis-Sample-No-2		8	PIC X(8)
Lis-Sample-No-3		8	PIC X(8)
Lis-Sample-No-4		8	PIC X(8)
Lis-Sample-No-5		8	PIC X(8)
Lis-Sample-No-6		8	PIC X(8)
Sampler-Surname	186	20	PIC X(20)
Lis-Submission-No	206	8	PIC X(8)
Lis-Field-Page-Data	214	250	PIC X(250)
Filler	464	59	PIC X(59)
Water-Depth	523	5	* PIC 9(3)V99
Water-Layer-Code	528	1	PIC X
Bearing-From-Ref	529	3	PIC X(3)
Time-Precision	532	1	PIC X
SAMPLE-TYPE-DATA	533	100	PIC X(100)
(Several Different formats are possible - as follows depending on the Sample-type field value)			
COMPOSITE-SAMPLE (Codes: Depth = 012, Time = 013)			
Time (HHMM)	533	4	PIC X(4)
Number-Samples	537	2	PIC X(2)
Time-Interval	539	4	PIC X(4)
Depth-Interval	543	5	* PIC 9(3)V99
Filler	548	85	PIC X(85)
SEDIMENT-SAMPLE (Grab=051 Core=052)			
Depth-From	533	5	* PIC 9(3)V99
Depth-To	538	5	* PIC 9(3)V99
Filler	543	90	PIC X(90)

GROUP NAME/ SUB-GROUP/ FIELD NAME	OFFSET POSITION	FIELD LENGTH	PICTURE
PRECIPITATION-SAMPLE (Dry=060 Wet=061 Bulk=062 Snow=063)			
Initial-Date	533	6	PIC X(6)
Initial-Time	539	4	PIC X(4)
Precip-At-Exposure	543	1	PIC X
Precip-At-Removal	544	1	PIC X
Precip-Type	545	1	PIC X
Gauge-Depth	546	5	* PIC 9(3)V99
Precip-Start-Time	551	4	PIC X(4)
Precip-Stop-Time	555	4	PIC X(4)
Filler	559	74	PIC X(74).
LOW-VOLUME-SAMPLE (Seq=081 Nutech=082)			
Initial-Date	533	6	PIC X(6)
Initial-Time	539	4	PIC X(4)
Precip-At-Exposure	543	1	PIC X
Precip-At-Removal	544	1	PIC X
Passive-Indicator	545	1	PIC X
Flow-Volume	546	7	* PIC 9(6)V9
Passive-Number-1	553	5	PIC X(5)
Passive-Number-2	558	5	PIC X(5)
Filler	563	70	PIC X(70)
PHYTOTOXICOLOGY-SAMPLE (075 -air , 078 - fish sample)			
Species-Code	533	4	PIC X(4)
Sample-type	537	2	PIC X(2)
Area-Code	539	1	PIC X
Foliar-Injury-N	540	2	PIC X(2)
Foliar-Injury-C	542	2	PIC X(2)
Foliar-Injury-O	544	2	PIC X(2)
Allocation-Code	546	2	PIC X(2)
Conversion-Factor	548	3	PIC X(3)
SQ	551	1	PIC X
Snow-Sample-TD	552	2	PIC X(2)
Snow-Sample-FD	554	2	PIC X(2)
Snow-Sample-C	556	2	PIC X(2)
Soil-PH	558	3	PIC X(3)
TC	561	2	PIC X(2)
NR	563	2	PIC X(2)
GS	565	2	PIC X(2)
A	567	3	PIC X(3)
B	570	2	PIC X(2)
C	572	1	PIC X
Filler	573	60	PIC X(60)

GROUP NAME/ SUB-GROUP/ FIELD NAME	OFFSET POSITION	FIELD LENGTH	PICTURE
OTHER-FIELDS			
UTM-COORDINATES			
Zone	633	2	PIC X(2)
Easting	635	8	* PIC 9(7)V9
Northing	643	8	* PIC 9(7)V9
Latitude	651	8	PIC X(8)
Longitude	659	9	PIC X(9)
Region-Code	668	2	PIC X(2)
District-Code	670	3	PIC X(3)
Municipality-Code	673	5	PIC X(5)
Filler	678	20	PIC X(20)
ID-Location-Desc	698	40	PIC X(40)
Lis-Sample-Desc-1	738	40	PIC X(40)
Lis-Sample-Desc-2	778	40	PIC X(40)
Lis-Sample-Desc-3	818	40	PIC X(40)
Lis-Sample-Desc-4	858	40	PIC X(40)
Filler	898	85	PIC X(85)
SYSTEM-CONTROL-FIELDS			
Filler	983	13	PIC X(13)
Input-Source-Code	996	1	PIC X(1)
Update-Source-Code	997	1	PIC X(1)
Result-Area-Counter	998	3	PIC 9(3)
VARIABLE-RECORD-PORTION (can occur up to 300 times)			
Test-Name	1001	6	PIC X(6)
Analytical-Method	1007	6	PIC X(6)
UNIT-OF-MEASURE			
Unit-Code	1013	3	PIC 9(3)
Scale-Code	1016	3	PIC 9(3)
Remark-Code	1019	3	PIC 9(3)
Alphabetic-Result-SW	1022	1	PIC X
Number-Of-Decimals	1023	1	PIC 9
Result-Value	1024	12	PIC -9999V999E+99

SPSS 20 OR 40 BUCKET FILE

FILE CHARACTERISTICS:
Recording Mode: Fixed - Blocked
Record Size: 997 characters (SPSS20)
1697 characters (SPSS40)
(bucket area contains 35 characters each)
Organ. Type: Physical sequential

NOTE: PICTURE Column which has a “*” preceeding it could contain spaces.

GROUP NAME/ SUB-GROUP/ FIELD NAME	OFFSET POSITION		FIELD LENGTH	PICTURE
FILE-ID				
System-ID	1	“SIS”	3	PIC X(3)
File-No	4	“70”	2	PIC X(2)
SEQUENCE-KEY				
Program-Study	6		5	PIC X(5)
Station-ID	11		20	PIC X(20)
Sample-Date (YYMMDD)	31		6	PIC 9(6)
Sample-Distance	37		5	PIC 9(5)
Sample-Time (ZHHMM)	42		5	PIC 9(5)
Sample-Depth	47		5	PIC 9(3)V99
Sample-Type	52		3	PIC 9(3)
Sample-Number (field)	55		8	PIC X(8)
OTHER-FIELDS				
Record-Type	63		1	PIC X(1)
Record-Status	64		1	PIC X(1)
Date-Record-Added	65		6	PIC X(6)
Project-SubProject	71		4	PIC X(4)
SAMPLING-AGENCY				
Ministry	75		2	PIC X(2)
Division			2	PIC X(2)
Branch			2	PIC X(2)
Section			2	PIC X(2)
Unit			2	PIC X(2)
ANALYSIS-AGENCY				
Ministry	85		2	PIC X(2)
Division			2	PIC X(2)
Branch			2	PIC X(2)
Section			2	PIC X(2)
Unit			2	PIC X(2)
Lis-Sample-Type	95		2	PIC X(2)
Lis-Field-Type	97		2	PIC X(2)
Lis-Approval	99		5	PIC X(5)

GROUP NAME/ SUB-GROUP/ FIELD NAME	OFFSET POSITION	FIELD LENGTH	PICTURE
Water-Depth	104	5	* PIC 9(3)V99
Water-Layer-Code	109	1	PIC X
Bearing-From-Ref	110	3	PIC X(3)
Time-Precision	113	1	PIC X
SAMPLE-TYPE-DATA (Several Different formats are possible depending on the Sample-type field value)			
see SRM Format	114	65	PIC X(65)
OTHER-FIELDS			
Region-Code	179	2	PIC X(2)
District-Code	181	3	PIC X(3)
Municipality-Code	184	5	PIC X(5)
Sampler-Surname	189	20	PIC X(20)
Filler	209	50	PIC X(50)
UTM-COORDINATES			
Zone	259	2	PIC X(2)
Easting		8	* PIC 9(7)V9
Northing		8	* PIC 9(7)V9
Precision		1	PIC X
GEOGRAPHICAL-COORDINATES			
Latitude	278	8	PIC X(8)
Longitude		9	PIC X(9)
Precision		1	PIC x
Result-Area-Counter	296	2	PIC 9(2)
RESULT-PORTION (FORMAT-1)	occurs 20 or 40 times		
Test-Name	298	6	PIC X(6)
Analytical-Method		6	PIC X(6)
UNIT-OF-MEASURE			
Unit-Code		3	PIC 9(3)
Scale-Code		3	PIC 9(3)
Remark-Code		3	PIC 9(3)
Alphabetic-Result-SW		1	PIC X
Number-Of-Decimals		1	PIC 9
Result-Value		12	PIC -9999V999E+99
RESULT-PORTION (FORMAT-2)	this is format of first record on file occurs 20 or 40 times		
Test-Name	298	6	PIC X(6)
ABBREVIATED-TEST-DESC			
Decscription-1	304	8	PIC X(8)
Decscription-2		8	PIC X(8)
Decscription-3		8	PIC X(8)
Filler		5	PIC X(5)

NOTE: The FORMAT-2 bucket area defines the format of the first record on the file. This record gives the abbreviated descriptions for the test names on this file.

FORMAT-1 defines bucket area for all subsequent records on the file which contain results. The result area would be read as E12.3 in fortran. If an result area contains no value, the “Alphabetic-Value-SW” field will contain an “M”. Alphanumberic result areas will have a “A” in this field. The “minis” sign position will contain a space for positive numbers.

FILE132 OR FILE132A FILE

FILE CHARACTERISTICS:

Recording Mode:	Fixed - Blocked
Record Size:	132 characters
Organ. Type:	Physical sequential by sample key

NOTE: PICTURE Column which has a "*" preceeding it could contain spaces.

GROUP NAME/ SUB-GROUP/ FIELD NAME	OFFSET POSITION	FIELD LENGTH	PICTURE
===========	========	======	=======

This file contains several types of record formats. The FILE132 file contains only record type "01", "02", "10" and "50". The FILE132A file contains all record types.

Record Type 01:
Is a control record specifying the number of tests requested in the retrieval and the number of Type 02 and type 50 records present.

Record-Type (01)	1	2	PIC X
Filler	3	21	PIC X(21)
Number-of-tests	24	3	PIC 9(3)
Filler	27	23	PIC X(23)
Number-of-Type50-Records	50	3	PIC 9(3)
Filler	53	80	PIC X(80)

Record Type 02:
Is a control record specifying the position of the test names as requested in the retrieval. Each type 02 record holds 7 tests. The number of type 2 records created is determined by the control field on record type 1 specifying the number of type 50 records.

Record-Type (02)	1	2	PIC X(2)
Filler	3	4	PIC X(4)

the following format occurs 7 times on each Type 2 record.

Test-Name	7	6	PIC X(6)
Analytical-method	13	6	PIC X(6)
Unit-of-Measure	19	6	PIC X(6)

GROUP NAME/ SUB-GROUP/ FIELD NAME	OFFSET POSITION	FIELD LENGTH	PICTURE
Record Type 10: Is a detail record specifying the sequence key of an individual sample record.			
Record-Type (10)	1	2	PIC X(2)
Filler	3	4	PIC X(4)
Program-Study	7	5	PIC X(5)
Station-ID	12	20	PIC X(20)
Sample-Date (YYMMDD)	32	6	PIC 9(6)
Sample-Distance	38	5	PIC 9(5)
Sample-Time (ZHHMM)	43	5	PIC 9(5)
Sample-Depth	48	5	PIC 9(3)V99
Sample-Type	53	3	PIC 9(3)
Sample-Number (field)	56	8	PIC X(8)
Filler	64	69	PIC X(69)
Record Type 15:			
Record-Type (15)	1	2	PIC X(2)
Filler	3	4	PIC X(4)
Record-Type	7	2	PIC X(2)
Record-Status	9	1	PIC X
Date-Record-Added	10	6	PIC X(6)
Date-Record-Changed	16	6	PIC X(6)
Project-SubProject	22	4	PIC X(4)
Sample-Agency	26	10	PIC X(10)
Analysis-Agency	36	10	PIC X(10)
Filler	46	87	PIC X(87)
Record Type 20:			
Record-Type (20)	1	2	PIC X(2)
Filler	3	4	PIC X(4)
Lis-Sample-Type	7	2	PIC X(2)
Lis-Field-Type	9	2	PIC X(2)
Lis-Approval	11	30	PIC X(30)
Lis-Sample-Numbers	41	48	PIC X(48)
Sampler-Surname	89	20	PIC X(20)
Submission-Number	109	8	PIC X(8)
Filler	117	16	PIC X(16)

GROUP NAME/ SUB-GROUP/ FIELD NAME	OFFSET POSITION	FIELD LENGTH	PICTURE
Record Type 25:			
Record-Type (25)	1	2	PIC X(2)
Filler	3	4	PIC X(4)
Water-Depth	7	5	PIC X(5)
Water-Layer	12	1	PIC X
Bearing-From-Ref	13	3	PIC X(3)
Time-Precission	16	1	PIC X
Field-Data-Area	17	100	PIC X(100)
Filler	117	16	PIC X(16)
Record Type 30:			
Record-Type (30)	1	2	PIC X(2)
Filler	3	4	PIC X(4)
Field-Page-Data (part-1)	7	100	PIC X(100)
Filler	107	26	PIC X(26)
Record Type 31:			
Record-Type (31)	1	2	PIC X(2)
Filler	3	4	PIC X(4)
Field-Page-Data (part-2)	7	100	PIC X(100)
Filler	107	26	PIC X(26)
Record Type 32:			
Record-Type (32)	1	2	PIC X(2)
Filler	3	4	PIC X(4)
Field-Page-Data (part-3)	7	50	PIC X(50)
Filler	107	76	PIC X(76)
Record Type 35:			
Record-Type (35)	1	2	PIC X(2)
Filler	3	4	PIC X(4)
UTM-Zone	7	2	PIC X(2)
UTM-Easting	9	8	PIC X(8)
UTM-Northing	17	8	PIC X(8)
Latitude	25	8	PIC X(8)
Longitude	33	9	PIC X(9)
Region-Code	42	2	PIC X(2)
District-Code	44	3	PIC X(3)
Filler	47	86	PIC X(86)

GROUP NAME/ SUB-GROUP/ FIELD NAME	OFFSET POSITION	FIELD LENGTH	PICTURE
Record Type 40:			
Record-Type (40)	1	2	PIC X(2)
Filler	3	4	PIC X(4)
Location-Desc	7	40	PIC X(40)
Sample-Desc (part 1)	47	80	PIC X(80)
Filler	127	6	PIC X(6)
Record Type 41:			
Record-Type (41)	1	2	PIC X(2)
Filler	3	4	PIC X(4)
Sample-Desc (part 2)	7	80	PIC X(80)
Filler	87	46	PIC X(46)

Record Type 50:
Is a detail record containing the tests requested in the retrieval
Each type 50 record holds 7 tests.

Record-Type (50)	1	2	PIC X(2)
Filler	3	4	PIC X(4)

the following format occurs 7 times on each Type 50 record.

Alphabetic-Result-SW	7	1	PIC X
Number-Of-Decimals		1	PIC 9
Remark-Code		3	PIC X(3)
Result-Value		12	PIC -9999V999E+99
Filler		1	PIC X

The result area would be read as E12.3 in Fortran.
If an result area contains no valid value,
the "Alphabetic-Value-SW" field will contain a "M".
Alphanumberic result areas will have a "A" in this
field. The "minis" sign position will contain a space for
positive numbers.

APPENDIX B

TABLE OF CONTENTS

REPORT EXAMPLES B-1

RETRIEVAL CONTROL REPORT B-1
ABBREVIATIONS AND REMARKS USED ON REPORTS B-1
STATION DETAIL REPORT (without compress option) B-1
STATION DETAIL REPORT (with compress option) B-1
STATION SUMMARY REPORT (without compress option) B-1
STATION SUMMARY REPORT (with compress option) B-1
PARAMETER SUMMARY REPORT B-1
SELECTED STATION DESCRIPTION REPORT B-1
SELECTED TEST NAME REPORT B-1
SELECTED SRM DUMP REPORT B-1
WATER QUALITY CRITERIA STATION SUMMARY REPORT B-1
WATER QUALITY CRITERIA PARAMETER SUMMARY REPORT B-1
WATER QUALITY CRITERIA STATION EXCEEDENCE REPORT B-1

STATION PERIOD OF RECORD REPORT B-1
TEST NAME PERIOD OF RECORD REPORT B-1
ABBREVIATED SDF LISTING B-1
EXAMPLE OF FILE132A OUTPUT FILE B-1

APPENDIX B

TABLE OF CONTENTS

```
SAMPLE INFORMATION SYSTEM                         RETRIEVAL CONTROL REPORT          PRINT DATE   7 FEB 85       PAGE   1
RELEASE: 4.2    1 JAN 85


ENTER EDIT PHASE




          LIST OF REQUEST CRITERIA:

             USER: ENSDNM   NAME: MADDEAUX              BRANCH: SYSTEMS DEVELOPMENT   PHONE: 965-6952

          PROGRAM:  02006

          HEADING:                    SIS RETRIEVAL EXAMPLE

            TITLE:       STATION DETAIL REPORT - WITHOUT COMPRESS OPTION

          DATE RANGE:  A) FR: 830101 TO: 831231   B) FR:         TO:          C) FR:         TO:          D) FR:         TO:

          OPTIONS IN EFFECT FOR THIS RUN:
                    STATION DETAIL REPORT
                    SELECTED SDF REPORT
                    SELECTED CDF REPORT

          STATIONS REQUESTED:
                   STN ID  FROM: 3002331
                   STN ID  FROM: 3002334
                   STN ID  FROM: 3002345

          TESTS REQUESTED:
                   POS: 003  TEST: ACDG    METHOD:         UNIT:      UG/L     AS H
                   POS: 004  TEST: ALUT    METHOD:         UNIT:      MG/L    AS AL
                   POS: 016  TEST: BBWT    METHOD:         UNIT: UG/G DRY      AS B
                   POS: 015  TEST: BRUT    METHOD:         UNIT:      MG/L    AS BR
                   POS: 006  TEST: CAUR    METHOD:         UNIT:      MG/L    AS CA
                   POS: 010  TEST: CLIDUR  METHOD:         UNIT:      MG/L    AS CL
                   POS: 007  TEST: DO      METHOD:         UNIT:      MG/L     AS O
                   POS: 005  TEST: FEUT    METHOD:         UNIT:      MG/L    AS FE
                   POS: 013  TEST: KKUR    METHOD:         UNIT:      MG/L     AS K
                   POS: 009  TEST: NAUR    METHOD:         UNIT:      MG/L    AS NA
                   POS: 008  TEST: PH      METHOD:
                   POS: 014  TEST: PPO4FR  METHOD:         UNIT:      MG/L     AS P
                   POS: 001  TEST: SAMPLE  METHOD:
                   POS: 002  TEST: SUBMIT  METHOD:
                   POS: 011  TEST: VOLUME  METHOD:         UNIT:        ML
                   POS: 012  TEST: ZNUT    METHOD:         UNIT:      MG/L    AS ZN

       EXIT EDIT PHASE

 ENTER SDF SELECT PHASE
           INPUT SDF USED:  DSN = ENSD.NMSIS.SDF                         VOL = STOR04
           SDF RECORDS READ: 000006    REJECTED CONFIDENTIAL: 000000    SELECTED: 00003
       EXIT SDF SELECT PHASE

 ENTER SRM EXTRACT PHASE
```

```
          RT1011W  NO DATA FOUND AS REQUESTED FOR TEST NAME: DO
          INPUT SRM USED:  DSN = ENSD.NMSIS.SRM2                         VOL = STOR06    FILE DATE: 28 DEC 83
          SRM RECORDS READ: 000011  SELECTED: 000010  RECORDS WITH REJECTED TESTS: 000000
      EXIT SRM EXTRACT PHASE

ENTER SORT PHASE
          COMMENCING SELECTED SRM SORT
                  END OF SRM SORT PHASE
      EXIT SORT PHASE

ENTER DATA COMPRESS PHASE
          TOTAL RECORDS PROCESSED = 000026
      EXIT DATA COMPRESS PHASE

ENTER STAT DETAIL REPORT PHASE
          TOTAL RECORDS PROCESSED = 000026   APPROXIMATE PAGES PRINTED =     4
      EXIT STAT DETAIL PHASE

ENTER SELECT SDF LIST PHASE
      EXIT SDF LIST PHASE

ENTER SELECTED CDF LIST PHASE
      EXIT CDF LIST PHASE

END OF JOB
```

SAMPLE INFORMATION SYSTEM   ABBREVIATIONS AND REMARKS USED ON REPORTS   DATE OF REPORT: 7 FEB 85

ABBREVIATIONS USED:

BTM GRAB	BOTTOM GRAB SAMPLE
CORE	BOTTOM CORE SAMPLE
CNT LOW	BACTERIA COUNT UNACCEPTABLE
DATA AVL	DATA NOT STORED IN THIS SYSTEM BUT IS AVAILABLE
DC	DEPTH COMPOSITE SAMPLE
DD	DAY
ET	END TIME
EXP	PRECIPITATING AT EXPOSURE (FOR PRECIP. SAMPLES)
GC	GAUGE DEPTH (FOR PRECIP. SAMPLES)
I	DEPTH INTERVAL (IN METERS) WHEN ASSOCIATED WITH DC TIME INTERVAL (IN HOURS) WHEN ASSOCIATED WITH TC
ID	INITIAL DATE (SET-UP DATE FOR PRECIP. SAMPLES)
IT	INITIAL TIME (SET-UP TIME FOR PRECIP. SAMPLES)
LAT	LATITUDE
LONG	LONGITUDE
LMT	LOCAL MEAN TIME
LO1	LOW VOLUME SEQUENTIAL SAMPLE
LO2	LOW VOLUME NUTECH SAMPLE
MM	MONTH
N	NUMBER OF SAMPLES (USED FOR DC, TC AND CORE SAMPLES)
DRY	PRECIPITATION SAMPLE (DRY ONLY)
WET	PRECIPITATION SAMPLE (WET ONLY)
BULK	PRECIPITATION SAMPLE (BULK)
GRND	PRICIPITATION SAMPLE (ON GROUND SNOW COURSE)
REM	PRECIPITATING AT REMOVAL (FOR PC SAMPLES 0,1,2,3)
SD	START DEPTH
ST	START TIME
SED CORE	SEDIMENT CORE SAMPLE (DEPTH FROM AND TO MEASURED IN CM)
SED GRAB	SEDIMENT GRAB SAMPLE (DEPTH FROM AND TO MEASURED IN CM)
WLE	WATER LAYER - WHOLE LAKE COMPOSITE
EPI	WATER LAYER - EPILIMNION ZONE
MET	WATER LAYER - METALIMNION ZONE
HYP	WATER LAYER - HYPOLIMNION ZONE
EUP	WATER LAYER - EUPHOTIC ZONE
GEN	WATER LAYER - GENERAL LAYER
TC	TIME COMPOSITE SAMPLE
TNTC	BACTERIA TOO NUMEROUS TO COUNT
V	VOLUME WHEN ASSOCIATED WITH LO1 AND LO2 SAMPLES
YY	YEAR

NOTE:

ONE SAMPLE DESIGNATES DATA ASSOCIATED WITH A LOCATION AT ONE POINT IN TIME

SAMPLE INFORMATION SYSTEM

ABBREVIATIONS AND REMARKS USED ON REPORTS

DATE OF REPORT: 7 FEB 85

INDIVIDUAL TEST VALUES MAY BE QUALIFIED BY ONE OF THE FOLLOWING REMARKS:

REMARK	MEANING OF REMARK	COMMENT CODE
>	REPORTED VALUE FELT TO BE TOO LOW	PE
<	REPORTED VALUE FELT TO BE TOO HIGH	PE
F	TEST PERFORMED ON NON-FROZEN SAMPLE	
P	TEST PERFORMED ON UNPRESERVE SAMPLE	
T	NO TIME RECORDED: ANAYL. PERFORMED	
C	BACKGROUND COUNT TO NUMEROUS	
I	APPROX. VALUE: INSUFFICIENT DILUT.	
M	MANUALLY ANALYSED	
<R	DETECT LIMIT REPORT: VALUE < LIMIT	PE
<S	TRACE RESP.: < THAN VALUE REPORTED	PE
A	APPROXIMATE RESULT	
<T	RESULT REPORTED:NOT PROOF POSITIVE	PT
<N	NON-DETECTED	PE
E	ESTIMATED OR COMPUTED VALUE STORED	
<E	NO RESP.: (EXCESS DIL'N) MIN. VALUE	PE
<W	NO RESP.: MIN. VALUE REPORTED	PT
U	UNRELIABLE RESULT	

COMPUTED VALUES MAY BE QUALIFIED BY ONE OF THE FOLLOWING REMARKS:

<A	VALUE WITH A REMARK WHICH HAS A COMMENT CODE OF PT (AS ABOVE) USED IN COMPUTATIONS

NOTE: VALUES WITH COMMENT CODE OF PE
ARE NOT USED IN COMPUTATIONS

REMARK CODES APPEAR TO THE RIGHT OF THE VALUE I.E. 435.56<T

```
SAMPLE INFORMATION SYSTEM         STATION DETAIL REPORT - WITHOUT COMPRESS OPTION            DATE OF REPORT:  7 FEB 85 PAGE:      1
 B.O.W./ SITE: PLASTIC LAKE STEMFLOW          PW 1                                              STATION ID:  3-002-331
                 LAT:              LONG:                 U T M: 17 0670700.0 5005250.0 0

*=INTERIM  TEST-NAME:               FWSADP    SUBMIT    ACDG      ALUT      FEUT      CAUR      DO        PH        NAUR      CLIDUR
                                                       ACIDITY
                                                 LIS      GRAN  ALUMINUM      IRON   CALCIUM  DISOLVED              SODIUM  CHLORIDE
SAMPLE                              SAMPLE  SUBMIS'N  ENDPOINT  UNF.TOT.  UNF.TOT.  UNF.REAC    OXYGEN            UNF.REAC  UNF.REAC
DATE   HOUR     SAMPLE               DEPTH    NUMBER      UG/L      MG/L      MG/L      MG/L      MG/L                MG/L      MG/L
YYMMDD LMT       NUMBER                  M                AS H     AS AL     AS FE     AS CA      AS O        PH     AS NA     AS CL

830704 1130     22570               0.30     TE5780  1108.00     0.590     0.264       5.4                3.42      0.40       2.96
BULK ID: 837101 IT: 0615 D:  66.5 GC: 5
830828          23322               0.30     TE5823     2        0.260     0.140                          3.38      0.40       2.20
830917          23599               0.30     TE5844  1266.00     0.290     0.150       7.9                3.34      0.40       2.02

                      MAXIMUM                        1266.00     0.590     0.264       7.9                3.42      0.40       2.96
                   ARITH MEAN                         792        0.380     0.185       6.6                3.38      0.40       2.39
                    GEOM MEAN                         141        0.354     0.177       6.5                3.38      0.40       2.36
                      MINIMUM                           2        0.260     0.140       5.4                3.34      0.40       2.02
             STD DEV (GEOM *)                         688        0.182     0.069       1.8                0.04      0.00       0.50
    # SAMPLES (IN STATISTICS)                           3        3         3           2                  3         3          3
         % SAMPLES (EXCLUDED)

*=INTERIM   TEST-NAME:              VOLUME    ZNUT      KKUR      PPO4FR    BRUT      BBWT
                                                                                       BORON
                                                ZINC  POTASSIM       PO4   BROMINE  WASH VEG
SAMLE                               SAMPLE  UNF.TOT.  UNF.REAC  FIL.REAC  UNF.TOT.     TOTAL
DATE   HOUR     SAMPLE              VOLUME      MG/L      MG/L      MG/L      MG/L  UG/G DRY
YYMMDD LMT       NUMBER                 ML     AS ZN      AS K      AS P     AS BR      AS B

830704 1130     22570               1750     0.225      8.50    0.0010<T
BULK ID: 837101 IT: 0615 D:  66.5 GC: 5
830828          23322                800     0.077      6.96    0.0025<T      67      44.4
830917          23599               2700     0.080      7.30    0.0020<T

                      MAXIMUM       2700     0.225      8.50    0.0025        67      44.4
                   ARITH MEAN       1750     0.127      7.59    0.0018<A      67      44.4
                    GEOM MEAN       1558     0.111      7.56    0.0017<A
                      MINIMUM        800     0.077      6.96    0.0010        67      44.4
             STD DEV (GEOM *)        950     0.085      0.81    0.0008<A
    # SAMPLES (IN STATISTICS)          3     3          3       3              1       1
         % SAMPLES (EXCLUDED)
```

```
SAMPLE INFORMATION SYSTEM         STATION DETAIL REPORT - WITH COMPRESS OPTION          DATE OF REPORT:  7 FEB 85 PAGE:      1

 B.O.W./ SITE: PLASTIC LAKE STEMFLOW          PW 1                                             STATION ID:  3-002-331

                LAT:              LONG:                U T M: 17 0670700.0 5005250.0 0

*=INTERIM   TEST-NAME:               FWSADP    SUBMIT    ACDG      ALUT      FEUT      CAUR      PH        NAUR      CLIDUR     VOLUME
                                                        ACIDITY
                                                  LIS      GRAN  ALUMINUM      IRON   CALCIUM              SODIUM  CHLORIDE
SAMPLE                               SAMPLE  SUBMIS'N  ENDPOINT  UNF.TOT.  UNF.TOT.  UNF.REAC            UNF.REAC  UNF.REAC     SAMPLE
DATE   HOUR     SAMPLE                DEPTH    NUMBER      UG/L      MG/L      MG/L      MG/L                MG/L      MG/L     VOLUME
YYMMDD LMT      NUMBER                    M                AS H     AS AL     AS FE     AS CA        PH     AS NA     AS CL         ML

830704 1130     22570                0.30     TE5780 1108.00      0.590     0.264       5.4      3.42      0.40       2.96      1750
BULK ID: 837101 IT: 0615 D:   66.5 GC: 5
830828          23322                0.30     TE5823    2         0.260     0.140                3.38      0.40       2.20       800
830917          23599                0.30     TE5844 1266.00      0.290     0.150       7.9      3.34      0.40       2.02      2700

                       MAXIMUM                       1266.00      0.590     0.264       7.9      3.42      0.40       2.96      2700
                    ARITH MEAN                         792        0.380     0.185       6.6      3.38      0.40       2.39      1750
                     GEOM MEAN                         141        0.354     0.177       6.5      3.38      0.40       2.36      1558
                       MINIMUM                           2        0.260     0.140       5.4      3.34      0.40       2.02       800
              STD DEV (GEOM *)                         688        0.182     0.069       1.8      0.04      0.00       0.50       950
      # SAMPLES (IN STATISTICS)                          3        3         3           2        3         3         3            3
          % SAMPLES (EXCLUDED)

*=INTERIM   TEST-NAME:               ZNUT    KKUR      PPO4FR    BRUT      BBWT
                                                                              BORON
                                       ZINC  POTASSIM       PO4  BROMINE  WASH VEG
SAMPLE                             UNF.TOT.  UNF.REAC  FIL.REAC  UNF.TOT.    TOTAL
DATE   HOUR     SAMPLE                 MG/L      MG/L      MG/L      MG/L  UG/G DRY
YYMMDD LMT      NUMBER                AS ZN      AS K      AS P     AS BR      AS B

830704 1130     22570               0.225      8.50    0.0010<T
BULK ID: 837101 IT: 0615 D:   66.5 GC: 5
830828          23322               0.077      6.96    0.0025<T      67       44.4
830917          23599               0.080      7.30    0.0020<T

                       MAXIMUM      0.225      8.50    0.0025        67       44.4
                    ARITH MEAN      0.127      7.59    0.0018<A      67       44.4
                     GEOM MEAN      0.111      7.56    0.0017<A
                       MINIMUM      0.077      6.96    0.0010        67       44.4
              STD DEV (GEOM *)      0.085      0.81    0.0008<A
      # SAMPLES (IN STATISTICS)     3          3       3               1       1
          % SAMPLES (EXCLUDED)
```

```
SAMPLE INFORMATION SYSTEM            INDEX TO STATION REPORT             DATE OF REPORT:  7 FEB 85 PAGE:     4


                                                                                      LOCATION          C.O.M. PAGE
  RIVER                                                                                                 INDEX   NO.
  BASIN                STREAM                         SAMPLE POINT DESCRIPTION    DISTANCE     CODE


                    PLASTIC LAKE STEMFLOW                                           0.000 3-002-345     2 C-01    3
                    PLASTIC LAKE STEMFLOW                                           0.000 3-002-331     2 A-01    1
                    PLASTIC LAKE STEMFLOW                                           0.000 3-002-334     2 B-01    2
```

```
    SAMPLE INFORMATION SYSTEM         STATION SUMMARY REPORT - WITHOUT COMPRESS OPTION          DATE OF REPORT:  7 FEB 85 PAGE:     1

                                                                                                  STATION ID:  3-002-331
     B.O.W./ SITE: PLASTIC LAKE STEMFLOW        PW 1

                   LAT:              LONG:                U T M: 17 0670700.0 5005250.0 0

                          TEST-NAME:     FWSADP    SUBMIT    ACDG      ALUT      FEUT      CAUR      DO        PH        NAUR      CLIDUR
                                                           ACIDITY
                                                       LIS      GRAN  ALUMINUM      IRON   CALCIUM  DISOLVED              SODIUM  CHLORIDE
                                         SAMPLE  SUBMIS'N  ENDPOINT  UNF.TOT.  UNF.TOT.  UNF.REAC    OXYGEN            UNF.REAC  UNF.REAC
                                          DEPTH    NUMBER      UG/L      MG/L      MG/L      MG/L      MG/L                MG/L      MG/L
                                              M                AS H     AS AL     AS FE     AS CA      AS O        PH     AS NA     AS CL


                             MAXIMUM                      1266.00    0.590     0.264     7.9                 3.42      0.40      2.96
                          ARITH MEAN                        792      0.380     0.185     6.6                 3.38      0.40      2.39
                           GEOM MEAN                        141      0.354     0.177     6.5                 3.38      0.40      2.36
                             MINIMUM                          2      0.260     0.140     5.4                 3.34      0.40      2.02
                    STD DEV (GEOM *)                        688      0.182     0.069     1.8                 0.04      0.00      0.50
           # SAMPLES (IN STATISTICS)                          3      3         3         2                   3         3         3
                % SAMPLES (EXCLUDED)

                          TEST-NAME:     VOLUME    ZNUT      KKUR      PPO4FR    BRUT      BBWT
                                                                                             BORON
                                                      ZINC  POTASSIM       PO4   BROMINE  WASH VEG
                                         SAMPLE  UNF.TOT.  UNF.REAC  FIL.REAC  UNF.TOT.     TOTAL
                                         VOLUME      MG/L      MG/L      MG/L      MG/L  UG/G DRY
                                             ML     AS ZN      AS K      AS P     AS BR      AS B


                             MAXIMUM       2700    0.225      8.50    0.0025        67      44.4
                          ARITH MEAN       1750    0.127      7.59    0.0018<A      67      44.4
                           GEOM MEAN       1558    0.111      7.56    0.0017<A
                             MINIMUM        800    0.077      6.96    0.0010        67      44.4
                    STD DEV (GEOM *)        950    0.085      0.81    0.0008<A
           # SAMPLES (IN STATISTICS)          3    3          3       3              1       1
                % SAMPLES (EXCLUDED)
```

```
SAMPLE INFORMATION SYSTEM        STATION SUMMARY REPORT - WITH COMPRESS OPTION          DATE OF REPORT:  7 FEB 85 PAGE:      1

  B.O.W./ SITE: PLASTIC LAKE STEMFLOW          PW 1                                      STATION ID:  3-002-331

                LAT:                 LONG:                  U T M: 17 0670700.0 5005250.0 0

             TEST-NAME:          FWSADP     SUBMIT     ACDG      ALUT      FEUT      CAUR      PH        NAUR      CLIDUR     VOLUME
                                                     ACIDITY
                                               LIS      GRAN  ALUMINUM      IRON   CALCIUM              SODIUM  CHLORIDE
                                  SAMPLE  SUBMIS'N  ENDPOINT  UNF.TOT.  UNF.TOT.  UNF.REAC            UNF.REAC  UNF.REAC    SAMPLE
                                   DEPTH    NUMBER      UG/L      MG/L      MG/L      MG/L                MG/L      MG/L    VOLUME
                                       M                AS H     AS AL     AS FE     AS CA        PH     AS NA     AS CL        ML


                 MAXIMUM                             1266.00     0.590     0.264       7.9      3.42      0.40      2.96      2700
              ARITH MEAN                             792         0.380     0.185       6.6      3.38      0.40      2.39      1750
               GEOM MEAN                             141         0.354     0.177       6.5      3.38      0.40      2.36      1558
                 MINIMUM                               2         0.260     0.140       5.4      3.34      0.40      2.02       800
         STD DEV (GEOM *)                            688         0.182     0.069       1.8      0.04      0.00      0.50       950
   # SAMPLES (IN STATISTICS)                           3         3         3           2        3         3         3            3
        % SAMPLES (EXCLUDED)

             TEST-NAME:          ZNUT       KKUR      PPO4FR     BRUT      BBWT
                                                                            BORON
                                    ZINC  POTASSIM       PO4   BROMINE  WASH VEG
                                UNF.TOT.  UNF.REAC  FIL.REAC  UNF.TOT.     TOTAL
                                    MG/L      MG/L      MG/L      MG/L  UG/G DRY
                                   AS ZN      AS K      AS P     AS BR      AS B


                 MAXIMUM         0.225       8.50     0.0025       67       44.4
              ARITH MEAN         0.127       7.59     0.0018<A     67       44.4
               GEOM MEAN         0.111       7.56     0.0017<A
                 MINIMUM         0.077       6.96     0.0010       67       44.4
         STD DEV (GEOM *)        0.085       0.81     0.0008<A
   # SAMPLES (IN STATISTICS)     3           3        3             1        1
        % SAMPLES (EXCLUDED)
```

```
SAMPLE INFORMATION SYSTEM                      PARAMETER SUMMARY REPORT                 DATE OF REPORT:  7 FEB 85 PAGE:      1

      TEST: COND25  CONDUCTIVITY, 25C               UMHO/CM  AT 25 C          TIME PERIOD: 01 01 67  TO: 31 12 73

                                    DEPTH RANGE                             DEPTH RANGE                              DEPTH RANGE
                               0.00 MTR TO  10.00 MTR                11.00 MTR TO  50.00 MTR                51.00 MTR TO 999.00 MTR
                                RELATIVE TO BOTTOM                      RELATIVE TO BOTTOM                     RELATIVE TO BOTTOM
STATION IDENTIFICATION   MAXIMUM   AVERAGE   MINIMUM    NO  MAXIMUM   AVERAGE   MINIMUM    NO  MAXIMUM   AVERAGE   MINIMUM    NO

03-002-331                   463       194        95    11      160       129        98     2       98        97        95    11

03-002-334                    97        96        96     2                                           96        94        93     2

03-002-345                    97        96        93     3       97        97        96     4       97        95        93     1

03-003-015                    96        96        96     1       92        92        92     1       96        96        96     1

03-003-016                    98        96        94     5       97        96        92     8

03-003-020                    95        94        94     2       97        94        91     2

03-003-023                    95        94        94     2       98        98        98     2      101        98        93     9

03-003-056                    94        93        93     2                                           95        92        90     2

03-003-101                    95        94        93     2       98        98        98     2       98        95        91     9

05-001-005                    96        95        95     2       98        97        95     4       97        95        94     7

05-001-010                    99        96        94     4      101        96        91     8       88        88        88     1

05-001-110                    96        96        96     1                                           96        93        90     2


               MAXIMUM       463       194        96    37      160       129        98    33      101        98        96    50
            ARITH MEAN       127       104        94            104       100        95              96        94        92
             GEOM MEAN       110       101        94            103        99        95              96        94        92
               MINIMUM        94        93        93             92        92        91              88        88        88
               STD DEV       106        28        92             21        11        92               3         3        92
```

```
SAMPLE INFORMATION SYSTEM         WATER QUALITY CRITERIA  STATION SUMMARY REPORT                DATE OF REPORT:  7 FEB 85 PAGE:     1
                                    SAMPLES EXCEEDING WATER QUALITY CRITERIA

 B.O.W./ SITE: PLASTIC LAKE STEMFLOW         PW 1                                                STATION ID:  3-002-331
 SAMPLE POINT: INSIDE EASTERN GAP
 STATION TYPE: LAKE                                       MAJOR BASIN: GREAT LAKES                            STORET CODE: 02
                                                          MINOR BASIN: LAKE SUPERIOR                                       001

                 LAT:              LONG:                  U T M: 17 0670700.0 5005250.0 0

TIME PERIOD: 770101       TO: 791231    PERCENT OF SAMPLES EXCEEDING CRITERIA FOR WATER USES

                         SAMPLES    L    AQUATIC    LIVESTCK    DRINKING     BREWING
PARAMETER               NO     NO   V      & REC    WATERING       WATER      & SOFT
DESCRIPTION           EXPT    OBTN  L   PROTECT.                SUPPLIES     DRINKS

                                       %    AVE     %    AVE     %    AVE     %    AVE

ALKALINITY, TOTAL         0       6     0           0          0            0
BOD,  5 DAY,  TOTAL       0       7 P   0           0          0          100      1.6
CADMIUM, UNFILTERED       0       1 P 100   0.001   0          0          100    0.001
CONDUCTIVITY, 25C         0       7 P   0           0          0          100    107.3
DISSOLVED OXYGEN          0       7     0           0          0            0
WATER TEMPERATURE         0       7     0           0          0            0
HARDNESS,   TOTAL         0       6     0           0          0            0
NICKEL,  UNFILTERED       0       1 P   0           0          0          100    0.001
LEAD,    UNFILTERED       0       1     0           0          0            0
PH (-LOG H+ CONCN)        0       6 P   0           0          0          100     7.42
PHOSPHORUS,UNFILTERE      0       7 P   0           0          0          100    0.011
TURBIDITY                 0       7 P   0           0         86     5.48 100     5.70
```

```
SAMPLE INFORMATION SYSTEM        WATER QUALITY CRITERIA  PARAMETER SUMMARY REPORT          DATE OF REPORT:  7 FEB 85 PAGE:     1

                                              DISTRIBUTION OF STATIONS ACCORDING TO
                                                ARBITRARY EXCEEDENCE CLASSES


  PARAMETER : DO                    PARAMETER : DO                    PARAMETER : DO                    PARAMETER : DO
  DISSOLVED OXYGEN                  DISSOLVED OXYGEN                  DISSOLVED OXYGEN                  DISSOLVED OXYGEN
  LIVESTOCK WATERING                AQUATIC/RECRETION PROTECTION      BREWING & SOFT DRINK              DRINKING WATER SUPPLIES

     100 | ###                         100 | ###                         100 | 000                         100 | ###
         | ###                             | ###                             | 000                             | ###
  % I 90 | +++                      % I 90 | +++                      % I 90 | ###                      % I 90 | +++
    N    | +++                        N    | +++                        N    | ###                        N    | +++
      80 | ...                          80 | ...                          80 | ...                          80 | ...
  O E    | ...                      O E    | ...                      O E    | ...                      O E    | ...
  F A 70 | ...                      F A 70 | ...                      F A 70 | ...                      F A 70 | ...
    C    | ...                        C    | ...                        C    | ...                        C    | ...
    H 60 | ...                        H 60 | ...                        H 60 | ...                        H 60 | ...
  S      | ...                      S      | ...                      S      | ...                      S      | ...
  T   50 | ...                      T   50 | ...                      T   50 | ...                      T   50 | ...
  A C    | ...                      A C    | ...                      A C    | ...                      A C    | ...
  T L 40 | ...                      T L 40 | ...                      T L 40 | ...                      T L 40 | ...
  I A    | ...                      I A    | ...                      I A    | ...                      I A    | ...
  O S 30 | ...                      O S 30 | ...                      O S 30 | ...                      O S 30 | ...
  N S    | ...                      N S    | ...                      N S    | ...                      N S    | ...
  S   20 | ...                      S   20 | ...                      S   20 | ...                      S   20 | ...
         | ...                             | ...                             | ...                             | ...
      10 | ...                          10 | ...                          10 | ...                          10 | ...
         | ...                             | ...                             | ...                             | ...

   PERIOD  (A)  (B)  (C)  (D)        PERIOD  (A)  (B)  (C)  (D)        PERIOD  (A)  (B)  (C)  (D)        PERIOD  (A)  (B)  (C)  (D)

          NUMBER  OF STATIONS               NUMBER  OF STATIONS               NUMBER  OF STATIONS               NUMBER  OF STATIONS
 CLASSES   IN EACH CLASS           CLASSES   IN EACH CLASS           CLASSES   IN EACH CLASS           CLASSES   IN EACH CLASS

   XXX     0    0    0    0          XXX     0    0    0    0          XXX     0    0    0    0          XXX     0    0    0    0

   000     0    0    0    0          000     0    0    0    0          000     0    0    0    0          000     0    0    0    0

   ###     1    0    0    0          ###     1    0    0    0          ###     1    0    0    0          ###     1    0    0    0

   +++     1    0    0    0          +++     1    0    0    0          +++     0    0    0    0          +++     1    0    0    0

   ...     7    0    0    0          ...     7    0    0    0          ...     7    0    0    0          ...     7    0    0    0
 ______________________________________________________________________________________________________________________________

    STATION CLASS:

             XXX      (76 -100)     | % OF  SAMPLES   |                              PERIOD :

             000      (51 - 75)     |   AT EACH       |                                 (A) 01-JAN-77  TO  31-DEC-79

             ###      (26 - 50)     |   STATION       |                                 (B)            TO

             +++      ( 1 - 25)     |  EXCEEDING      |                                 (C)            TO

             ...      ( 0     )     |  CRITERIA       |                                 (D)            TO
```

```
SAMPLE INFORMATION SYSTEM      WATER QUALITY CRITERIA  STATION EXCEEDENCE REPORT       DATE OF REPORT:  7 FEB 85 PAGE:     1

        PARAMETER: DO                            DISSOLVED OXYGEN

            WATER USE: LIVESTOCK WATERING

                DATE PERIOD:   (A) 01-JAN-77  TO  31-DEC-79

                PERCENT: 000-001    STATION-ID                       STATION DESCRIPTION

                              03-002-003        LAKE SUPPERIOR                              INSIDE EASTERN GAP
                              03-002-004        LAKE SUPPERIOR                              NEAR ABITIBI THUNDER BAY PAPER MILL
                              03-002-056        LAKE SUPPERIOR                              3.5 MILES EAST OF WELCOME
                              03-002-555        LAKE SUPPERIOR                              2.5 KM EAST OF NORTHERN WOODS PRESERVES

                PERCENT: 000-025    STATION-ID                       STATION DESCRIPTION

                              03-002-003        LAKE SUPPERIOR                              INSIDE EASTERN GAP

                PERCENT: 026-050    STATION-ID                       STATION DESCRIPTION
                              03-002-056        LAKE SUPPERIOR                              3.5 MILES EAST OF WELCOME
```

```
SAMPLE INFORMATION SYSTEM        SELECTED STATION DESCRIPTION REPORT                 DATE OF REPORT:  7 FEB 85 PAGE:      1

  PROGRAM:  02   AIR ASSESSMENT & ABATEMENT
    STUDY:  005  TERRESTRIAL EFFECTS


3-002-331                  PLASTIC LAKE STEMFLOW         PW 1        CONFIDENTIAL:                            SETUP DATE:
    SAMPLE POINT DESC   :                                                                                  TERM  DATE:
    STATION TYPE/PLANT  :                                                                                  REGION:    DISTRICT:
    MAJOR/MINOR BASIN   :                                                                                  MAJOR: 00  MINOR: 000
    TERMINAL STREAM     :                                           DISTANCE (KM):     0.000               STREAM CODE: 0000
    GEOG CO-ORDINATES   : LAT:            LONG:                     U.T.M.: 17  0670700.0  5005250.0  0    AGENCY:

3-002-334                  PLASTIC LAKE STEMFLOW         PW 4        CONFIDENTIAL:                            SETUP DATE:
    SAMPLE POINT DESC   :                                                                                  TERM  DATE:
    STATION TYPE/PLANT  :                                                                                  REGION:    DISTRICT:
    MAJOR/MINOR BASIN   :                                                                                  MAJOR: 00  MINOR: 000
    TERMINAL STREAM     :                                           DISTANCE (KM):     0.000               STREAM CODE: 0000
    GEOG CO-ORDINATES   : LAT:            LONG:                     U.T.M.: 17  0670700.0  5005250.0  0    AGENCY:

3-002-345                  PLASTIC LAKE STEMFLOW         HE 3        CONFIDENTIAL:                            SETUP DATE:
    SAMPLE POINT DESC   :                                                                                  TERM  DATE:
    STATION TYPE/PLANT  :                                                                                  REGION:    DISTRICT:
    MAJOR/MINOR BASIN   :                                                                                  MAJOR: 00  MINOR: 000
    TERMINAL STREAM     :                                           DISTANCE (KM):     0.000               STREAM CODE: 0000
    GEOG CO-ORDINATES   : LAT:            LONG:                     U.T.M.: 17  0670700.0  5005250.0  0    AGENCY:
```

```
SAMPLE INFORMATION SYSTEM          SELECTED TEST NAME REPORT                     DATE OF REPORT:  7 FEB 85 PAGE:     1

TEST                                               ABREV
NAME                     DESCRIPTION               DESCRIPTION UNIT/SCALE


  ACDG           ACIDITY, GRAN ENDPOINT              ACIDITY    MICROGRAM PER LITER
                                                        GRAN    AS HYDROGEN
                                                    ENDPOINT

  ALUT           ALUMINIUM, UNFILTERED TOTAL        ALUMINUM    MILLIGRAM PER LITER
                                                    UNF.TOT.    AS ALUMINIUM

  BBWT           BORON,   WASH VEG,  TOTAL             BORON    MICROGRAM PER GRAM DRY
                                                    WASH VEG    AS BORON
                                                       TOTAL

  BRUT           BROMINE, UNFILTERED TOTAL           BROMINE    MILLIGRAM PER LITER
                                                    UNF.TOT.    AS BROMINE

  CAUR           CALCIUM, UNFILTERED REACTIVE        CALCIUM    MILLIGRAM PER LITER
                                                    UNF.REAC    AS CALCIUM

  CLIDUR         CHLORIDE,         UNFIL.REAC       CHLORIDE    MILLIGRAM PER LITER
                                                    UNF.REAC    AS CHLORINE

  DO             DISSOLVED OXYGEN                   DISOLVED    MILLIGRAM PER LITER
                                                      OXYGEN    AS OXYGEN

  FEUT           IRON,     UNFILTERED TOTAL             IRON    MILLIGRAM PER LITER
                                                    UNF.TOT.    AS IRON (FERRUM)

  KKUR           POTASSIUM,UNFILTERED REACTIVE      POTASSIM    MILLIGRAM PER LITER
                                                    UNF.REAC    AS POTASSIUM (KALIUM)

  NAUR           SODIUM,   UNFILTERED REACTIVE        SODIUM    MILLIGRAM PER LITER
                                                    UNF.REAC    AS SODIUM

  PH             PH (-LOG H+ CONCN)                       PH

  PPO4FR         PHOSPHATE,FILTERED REACTIVE             PO4    MILLIGRAM PER LITER
                                                    FIL.REAC    AS PHOSPHORUS

  SAMPLE         SAMPLE NUMBER (FIELD)                SAMPLE
                                                      NUMBER
```

```
SAMPLE INFORMATION SYSTEM                   SELECTED SRM DUMP REPORT                          DATE OF REPORT:  7 FEB 85 PAGE:      1



  STATION ID CODES        SAMPLE   DIST  SAMP TIME SAMPLE   SAMPLE  SAMPLE  REC  SAMP   DATE      SAMPLING AGENCY   ANALYSIS AGENCY
                           DATE    SHORE ZN:HR:MN  DEPTH    TYPE    NUMBER  TYPE STATUS ADDED     MN:DV:BR:SC:UN    MN:DV:BR:SC:UN

3-002-331                83/08/28  00000  5 00 00  000.00    011   00023322  XX    F    83/11/02  01 02 02 04 04    01 01 10
                                                                                        83/12/28


WATER  WATER  BEARING   LOCATION CODES     TIME -----C O M P O S I T E   S A M P L E-----
LAYER  DEPTH   POINT   REGION:DIST:MUNIC   PREC HR:MIN:NO SAMPLES:TIME INTER:DEPTH INTER

  0    000.00   000                XXXXX    0


   LIS        LIS   SAMP FIELD
SUBMISSION  APPROV  TYPE TYPE   ------------------- LIS SAMPLE NUMBERS --------------

   TE5823    YSAW    SF   XX    XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX XXXXXXXX


--SAMPLERS SURNAME--   PROJ SUB                                                          -NO OF-
                       CODE PROJ   ---SUPPLEMENTARY LOCATION / SAMPLE DESCRIPTIONS---   RESULTS

U OF T                  12   03         XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX          102
                                        XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX


TEST   ANAL   UNIT    REM A D    RESULT     TEST   ANAL   UNIT    REM A D    RESULT     TEST   ANAL   UNIT    REM A D    RESULT
NAME   METHOD       SCALE L C    VALUE      NAME   METHOD       SCALE L C    VALUE      NAME   METHOD       SCALE L C    VALUE

ACDG   001BT5 063 801     N 0     2.        CC02UR        064 923     N 2    45.65      FLRDN         401 402     N 0     7.
AGWT          073 847     N 1    23.4       CC14          310 502     N 1     7.6       FSMF          301 532     N 0     9.
ALUT   535AF1 064 813     N 3     0.260     CHLRAC        063         N 2     6.89      FSMPN         301 532     N 0     3.
BBWT          073 805     N 1    44.4       CHLRAT        063         N 1    44.6       FTFLOW        045 504     N 1     0.8
BEFT          064 804     N 3     4.567     CHLRCT        063         N 1     6.8       FUSPR         303 532     N 1     3.6
BOD20         064 808     N 1   453.0       CLIDUR 005AI0 064 817     N 2     2.20      FWALKT        064 915     N 2     9.36
BRIDUR        064 835     N 0    45.        CLN1          063 817     N 2     7.79      FWCURD        323         N 1     3.7
BRUT          064 835     N 0    67.        CLN2          063 817     N 0     8.        FWCURV        014 501     N 1     4.8
B1ACET        063         N 0    90.        CLN3          063 817     N 0     9.        FWDPTS        016         N 1    49.3
B1BTE1        063         N 2     0.56      CLTAUR        063 817     N 1     0.0       FWLGHT        405 406     N 1   953.7
B1DECA        063         N 3     0.088     CLTRS         063 817     N 1     4.5       FWLVLA        016         N 1     9.8
B1HPTA        063         N 2    44.44      COFT          064 827     N 2     9.73      FWLVLL        016         N 0   368.
B1PRPA        063         N 2     6.75      COLAP         341         N 2     2.11      FWLVLM        016         N 0   709.
B2OXYL        063         N 1  4566.7       CPMF          999         N 2    11.11      FWSDDP        016         N 0   937.
B2PXYL        063         N 1   567.7       CSUT          064 855     N 1    23.7       FWTEMP        321         N 0    96.
B2STYR        063         N 1     6.7       CS134         362         N 0    34.        GAC           362         N 0    63.
B2TOLU        063         N 1     3.7       CS137         362         N 0    46.        GACF          362         N 2    25.62
B2002P        063         N 1     8.4       DIC           064 806     N 0    68.        GACP          362         N 1    26.3
B3ANAP        091         N 1     7.8       FAHUMD        500         N 1    58.9       GBC           362         N 1    68.4
B3BAA         091         N 2     0.89      FATEMP        321         N 2     8.62      GBCF          362         N 2     9.02
B3CHRY        091         N 1    46.7       FAWNDD        323         N 1    84.7       GBCP          362         N 1     9.2
B3FANT        091         N 0    65.        FAWNDF        126         N 1    55.3       GEUT          064 832     N 1     2.7
```

```
SAMPLE INFORMATION SYSTEM                    STATION PERIOD OF RECORD REPORT                RUN DATE:   7 FEB 85      PAGE:     01

 PROGRAM : 02     AIR ASSESSMENT & ABATEMENT
   STUDY : 006    A.P.I.O.S. TASK 3 - AIR                                                     *** - DENOTES NO SDF RECORD

                           PER.OF     TOTAL   TEST                    TEST                     TEST                     TEST
  STATION ID               RECORD     SAMPLES NAME    METHOD     #    NAME    METHOD      #    NAME    METHOD      #    NAME    METHOD      #


3-002-331                   83-83         3   ACDG    001BT5     3    AGWT                1    ALUT    535AF1      3    BBWT                1
                                              BEFT               1    BOD20               1    BRIDUR              1    BRUT                1
                                              B1ACET             1    B1BTE1              1    B1DECA              1    B1HPTA              1
                                              B1PRPA             1    B2OXYL              1    B2PXYL              1    B2STYR              1
                                              B2TOLU             1    B2002P              1    B3ANAP              1    B3BAA               1
                                              B3CHRY             1    B3FANT              1    B3FLUR              1    B3IP                1
                                              B3NAPH             1    B3PHAN              1    B3PYR               1    B3010F              1
                                              B3014F             1    B3016F              1    B3019X              1    CAUR    002BA1      2
                                              CCELEM             1    CCNAUR              1    CCOSUR              1    CCO2UR              1
                                              CC14               1    CHLRAC              1    CHLRAT              1    CHLRCT              1
                                              CLIDUR  005AI0     3    CLN1                1    CLN2                1    CLN3                1
                                              CLTAUR             1    CLTRS               1    COFT                1    COLAP               1
                                              CPMF               1    CSUT                1    CS134               1    CS137               1
                                              DIC                1    FAHUMD              1    FATEMP              1    FAWNDD              1
                                              FAWNDF             1    FBHGHT              1    FBSLOP              1    FCMPN               1
                                              FEEOX              1    FEUT    535AF1      3    FFGAS               1    FFPART              1
                                              FIBAT              1    FIBATM              1    FIBATU              1    FIBA5               1
                                              FIBA5L             1    FLRDN               1    FSMF                1    FSMPN               1
                                              FTFLOW             1    FUSPR               1    FWALKT              1    FWCURD              1
                                              FWCURV             1    FWDPTS              1    FWLGHT              1    FWLVLA              1
                                              FWLVLL             1    FWLVLM              1    FWSDDP              1    FWTEMP              1
                                              GAC                1    GACF                1    GACP                1    GBC                 1
                                              GBCF               1    GBCP                1    GEUT                1    KKUR    002DA1      3
                                              MGUR    001BA1     2    MNUT    535AF1      3    NAUR    002DA1      3    NNHTFR  103BC2      3
                                              NNO3UR  003AI0     2    PH      002AI1      3    PPO4FR  103AC2      3    P2SENC              1
                                              SSO4UR  003AI0     3    VOLUME  001AI1      3    ZNUT    535AF1      3    ZNWT                1
 3-002-334                  83-83         2   ACDG    001BT5     2    ALUT    535AF1      2    CAUR    002BA1      2    CLIDUR  005AI0      2
                                              FEUT    535AF1     2    KKUR    002DA1      2    MGUR    001BA1      2    MNUT    535AF1      2
                                              NAUR    002DA1     2    NNHTFR  103BC2      2    NNO3UR  003AI0      1    PH      002AI1      2
                                              PPO4FR  103AC2     2    SSO4UR  003AI0      2    VOLUME  001AI1      2    ZNUT    535AF1      2


 3-002-345                  83-83         5   ACDG    001BT5     5    ALUT    535AF1      5    CAUR    002BA1      5    CLIDUR  005AI0      5
                                              FEUT    535AF1     5    KKUR    002DA1      5    MGUR    001BA1      5    MNUT    535AF1      5
                                              NAUR    002DA1     5    NNHTFR  103BC2      5    NNO3UR  003AI0      5    PH      002AI1      5
                                              PPO4FR  103AC2     5    SSO4UR  003AI0      5    VOLUME  001AI1      5    ZNUT    535AF1      5


 3-002-350                  83-83         1   ACDG    001BT5     1    ALUT    535AF1      1    CAUR    002BA1      1    CLIDUR  005AI0      1
                                              FEUT    535AF1     1    KKUR    002DA1      1    MGUR    001BA1      1    MNUT    535AF1      1
                                              NAUR    002DA1     1    NNHTFR  103BC2      1    PH      002AI1      1    PPO4FR  103AC2      1
                                              SSO4UR  003AI0     1    VOLUME  001AI1      1    ZNUT    535AF1      1
```

```
SAMPLE INFORMATION SYSTEM                 TEST NAME PERIOD OF RECORD                    RUN DATE:   7 FEB 85     PAGE:    01

 PROGRAM : 02     AIR ASSESSMENT & ABATEMENT
   STUDY : 006    A.P.I.O.S. TASK 3 - AIR                                                ***  - DENOTES NO SDF RECORD

                          PER.OF    TOTAL   TEST
                          RECORD    SAMPLES NAME   METHOD


                           83-83        11  ACDG   001BT5
                           83-83         1  AGWT
                           83-83        11  ALUT   535AF1
                           83-83         1  BBWT
                           83-83         1  BEFT
                           83-83         1  BOD20
                           83-83         1  BRIDUR
                           83-83         1  BRUT
                           83-83         1  B1ACET
                           83-83         1  B1BTE1
                           83-83         1  B1DECA
                           83-83         1  B1HPTA
                           83-83         1  B1PRPA
                           83-83         1  B2OXYL
                           83-83         1  B2PXYL
                           83-83         1  B2STYR
                           83-83         1  B2TOLU
                           83-83         1  B2002P
                           83-83         1  B3ANAP
                           83-83         1  B3BAA
                           83-83         1  B3CHRY
                           83-83         1  B3FANT
                           83-83         1  B3FLUR
                           83-83         1  B3IP
                           83-83         1  B3NAPH
                           83-83         1  B3PHAN
                           83-83         1  B3PYR
                           83-83         1  B3010F
                           83-83         1  B3014F
                           83-83         1  B3016F
                           83-83         1  B3019X
                           83-83        10  CAUR   002BA1
                           83-83         1  CCELEM
                           83-83         1  CCNAUR
                           83-83         1  CCOSUR
                           83-83         1  CCO2UR
                           83-83         1  CC14
                           83-83         1  CHLRAC
                           83-83         1  CHLRAT
                           83-83         1  CHLRCT
                           83-83        11  CLIDUR 005AI0
                           83-83         1  CLN1
                           83-83         1  CLN2
                           83-83         1  CLN3
                           83-83         1  CLTAUR
                           83-83         1  CLTRS
```

```
SAMPLE INFORMATION SYSTEM   ABBREVIATED SDF LIST   FEB 07 84  PAGE:    1

  PROGRAM:  02   AIR ASSESSMENT & ABATEMENT
    STUDY:  005  TERRESTRIAL EFFECTS                     STATION ID SEQ


APIOS-VEG                                             3001000

PLASTIC LAKE STEMFLOW          PW 1                   3002331

PLASTIC LAKE STEMFLOW          PW 4                   3002334

PLASTIC LAKE STEMFLOW          PW 10                  3002340

PLASTIC LAKE STEMFLOW          HE 3                   3002345

PLASTIC LAKE STEMFLOW          HE 5                   3002347

PLASTIC LAKE STEMFLOW          MS 2                   3002350

PLASTIC LAKE INCIDENT SNOW                            3002360

PLASTIC LAKE THROUGHFALL SNOW  PW 9                   3002369
```

```
SAMPLE INFORMATION SYSTEM                   EXAMPLE OF FILE132A OUTPUT FILE              PRINT DATE   7 FEB 85         PAGE   1



01     TESTS REQUESTED: 014 NUMBER TYPE 50 CARDS: 002
02     ACDG          063801ALUT          064813FEUT          064826CAUR          064820DO            064808PH            000000NAUR          06481
02     CLIDUR        064817VOLUME        052000ZNUT          064830KKUR          064819PP04FR        064815BRUT          064835BBWT          07380
10     020063002331                   8307040000051130000000620002257O
15     XXF83111483122812030102020404010110
20     SFXXMRW                                XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXU OF T                             TE5780
25     000000000083710106159810665500000000
30
31
32
35     170670700050052500                           XXXXX
40     XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
41
50     N2000 1108000E+00 N3000 0000590E+00 N3000 0000264E+00 N1000 0005400E+00 M     0000000E+00 N2000 0003420E+00 N2000 0000400E+00
50     N2000 0002960E+00 N0000 1750000E+00 N3000 0000225E+00 N2000 0008500E+00 N4043 0000010E-01 M     0000000E+00 M     0000000E+00
10     020063002331                   830828000005000000000001100023322
15     XXF83110283122812030102020404010110
20     SFXXYSAW                               XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXU OF T                             TE5823
25     0000000000
30
31
32
35     170670700050052500                           XXXXX
40     XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
41
50     N0000 0002000E+00 N3000 0000260E+00 N3000 0000140E+00 M     0000000E+00 M     0000000E+00 N2000 0003380E+00 N2000 0000400E+00
50     N2000 0002200E+00 N0000 0800000E+00 N3000 0000077E+00 N2000 0006960E+00 N4043 0000025E-01 N0000 0067000E+00 N1000 0044400E+00
10     020063002331                   830917000005000000000001100023599
15     XXF83110283110212030102020404010110
20     SFXXYSAW                               XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXU OF T                             TE5844
25     0000000000
30
31
32
35     170670700050052500                           XXXXX
40     XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
41
50     N2000 1266000E+00 N3000 0000290E+00 N3000 0000150E+00 N1000 0007900E+00 M     0000000E+00 N2000 0003340E+00 N2000 0000400E+00
50     N2000 0002020E+00 N0000 2700000E+00 N3000 0000080E+00 N2000 0007300E+00 N4043 0000020E-01 M     0000000E+00 M     0000000E+00
```

APPENDIX C

TABLE OF CONTENTS

STATION ID FORMATS C-1

APPENDIX C

TABLE OF CONTENTS

The following examples illustrate the format of the station identifer code for several of the program/studies currently being used. The code can have a maximum of 20 numeric characters and is left justified within the 20 character field.

PGM/STUDY CODE	STATION ID LENGTH	FIELD NAMES	FIELD LENGTH
01 001	14	Body of Water	9(6)
		Sub-Section Code	9(2)
		Station Type Code	9(2)
		Station Number	9(4)
01 002 01 003 01 013	11	Terminal Basin	9(2)
		Terminal Stream	9(4)
		Station Number	9(3)
		Station Type	9(2)
01 004	10	Region Code	9(1)
		Non-Specific Area	9(1)
		Well no or Munic. right justified	9(8)
02 002	14	Collection Period	9(6)
		Instrument Code	9(2)
		Sample Type Code	9(2)
		Station Number	9(4)
02 001 02 004 02 008	5	Station Number (AQUIS Format)	9(5)
02 005 02 006	7	Region Code	9(1)
		Source/Study	9(3)
		Station Number	9(3)
03 001 03 002	14	Company Number	9(6)
		Company Site	9(2)
		Company Plant	9(1)
		Company Check Digit	9(1)
		Control Point 1 & 2	9(4)

PGM/STUDY CODE	STATION ID LENGTH	FIELD NAMES	FIELD LENGTH
03 003	4	Region Code	9(1)
		Area Code	9(3)
04 002	10	Certificate Number	X(7)
		Location Number	9(3)
06 001	11	Works Number	9(9)
06 002		Control Point	9(2)
06 003			
30 001	8	Latitude	9(4)
		Longitude	9(4)

APPENDIX D

TABLE OF CONTENTS

SRM FILE TOTALS D-1

APPENDIX D

TABLE OF CONTENTS

SRM STATISTICS AS OF MARCH 1983

Note: An update-to-date version of this table can be obtained by Users thru the Primary Menu - option "L" - List At Terminal SRM database Totals.

PROGRAM/STUDY	MASTER FILE		HISTORICAL FILE		TOTAL
	PERIOD	TOTAL	PERIOD	TOTAL	
WATER MANAGEMENT					
Great Lakes	81-83	20,958	67-80	182,534	203,492
Inland WQ Monotoring	82-83	8,899	65-81	136,749	145,648
Surface Water	82-83	2,964	74-81	40,510	43,474
Ground Water	81-83	1,194		N/A	1,610
Aquatic and Terrest.	76-83	8,341		N/A	8,341
A.P.I.O.S. II	81-83	9,040	74-80	20,779	29,819
Observation Wells		0	74-80	148,345	148,345
AIR ASSESS. & ABATE.					
Air Quality- AQUIS	82-83	3,569	81-82	35,403	38,972
A.P.I.O.S. I - Air	80-83	10,718		N/A	10,718
Hazard Contaminants	81-82	234		N/A	234
Terrestrial Effects	81-83	14,725		N/A	14,725
NANTICOKE - NEMP	81-83	2,800		N/A	2,800
A.P.I.O.S. III		-		N/A	
INDUSTRIAL ASSESSMENT					
Indust Compliance		-		N/A	
Indust Complaint	81-83	205		N/A	205
SOLID/LIQUID WASTE					
Landfill		10		N/A	10
MUNICIPAL MANAGEMENT					
Munic Waste Water	81-83	8,586		N/A	8,586
Munic Water Supply	82-83	4,937	81-82	24,695	29,632
Munic Complaint	81-83	145		N/A	145

PROGRAM/STUDY	MASTER FILE PERIOD TOTAL	HISTORICAL FILE PERIOD TOTAL	TOTAL
FISH CONTAMINANT ================ Routine Monitoring	-	N/A	
T O T A L S	97,741	589,015	686,756

APPENDIX E

TABLE OF CONTENTS

DATABASE CO-ORDINATOR LIST E-1

APPENDIX E

TABLE OF CONTENTS

APPENDIX: E - DATABASE CO-ORDINATOR LIST

PROGRAM/STUDY	DATABASE CO-ORDINATOR	BRANCH	PHONE NO
WATER MANAGEMENT ================			
Great Lakes	S. Mathai	Water Resources	965-4590
Inland WQ Monotoring	H. Harangozo	"	965-6995
Surface Water	D. Sharma	Central Region	424-3000
Ground Water	D. Vallery	Water Resources	965-6995
Aquatic and Terrest.	G. Hopkins	Aquatic - Terr.	248-3058
A.P.I.O.S. II	A. Nicolls	(DORSET)	248-3058
Observation Wells	D. Vallery	Water Resources	965-6995
AIR ASSESS. & ABATE. ====================			
Air Quality- AQUIS	K. Heidorn	Air Resources	965-5068
A.P.I.O.S. I - Air	D. Chung	"	965-1634
Hazard Contaminants	J. Hicks	"	965-4081
Terrestrial Effects	B. Chai	"	965-4516
NANTICOKE - NEMP	H. Sahota	"	965-1634
A.P.I.O.S. III	B. Chai	"	965-4516
INDUSTRIAL ASSESSMENT =====================			
Indust Compliance	D. Sharma	Central Region	424-3000
Indust Audit	D. Shantz	NE - Sudbury	675-4501
Indust Complaint	D. Sharma	Central Region	424-3000
SOLID/LIQUID WASTE ==================			
Landfill	D. Sharma	Central Region	424-3000
MUNICIPAL MANAGEMENT ====================			
Munic Waste Water	E. Dolinar	Water Resources	965-1655
Munic Water Supply	"	"	"
Munic Drinking Water	R. Hunsinger	Applied Resrch	248-3935
Munic Complaint	E. Dolinar	Water Resources	965-1655

PROGRAM/STUDY	DATABASE CO-ORDINATOR	BRANCH	PHONE NO
FISH CONTAMINANT ================ Routine Monitoring	J. Ralston	Water Resources	965-6954

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and retrieval system for sample
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